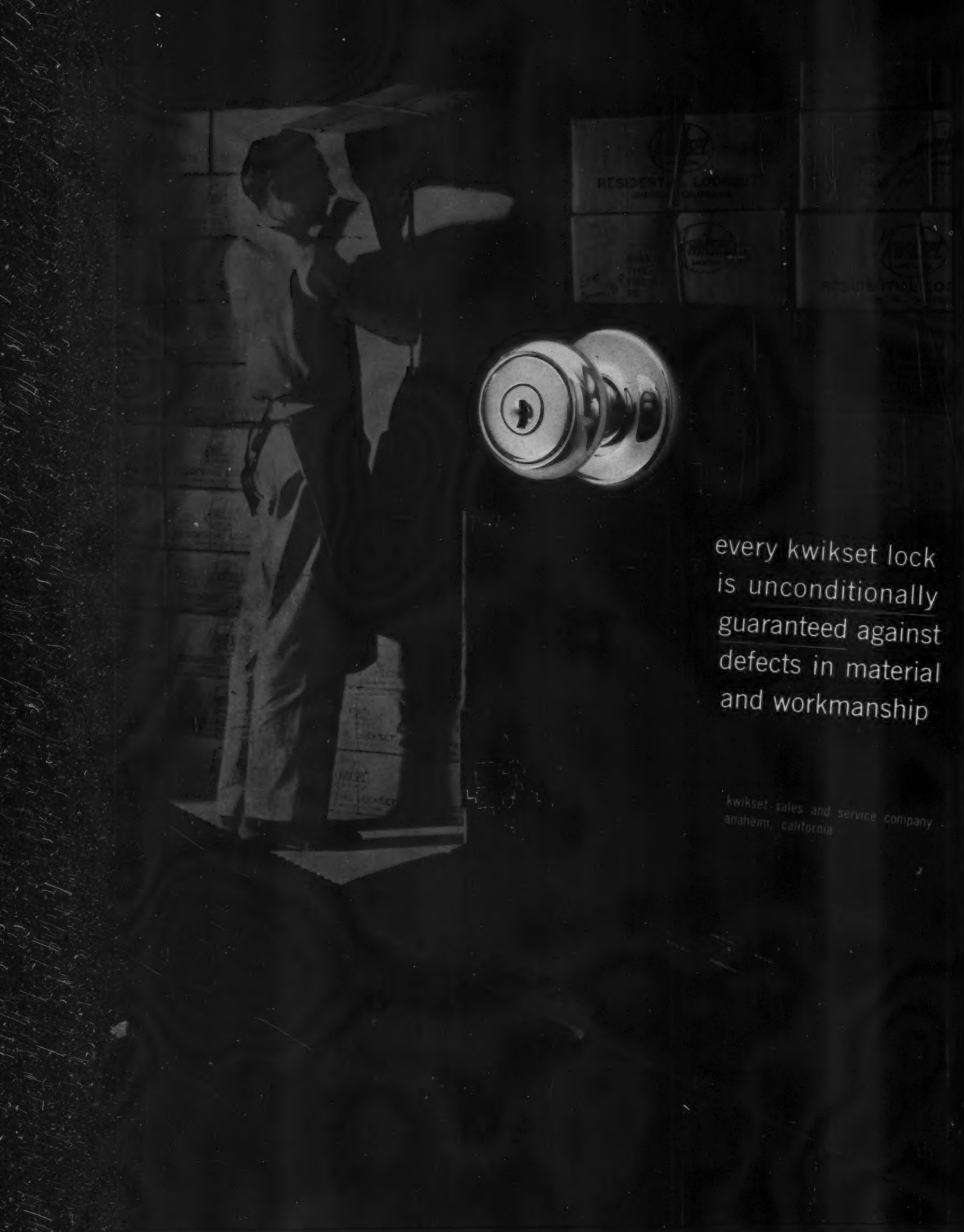
JULY 1951

ARCHITECTURAL RECORD



HUMANITY—OUR CLIENT By John Ely Burchard



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tical Tile
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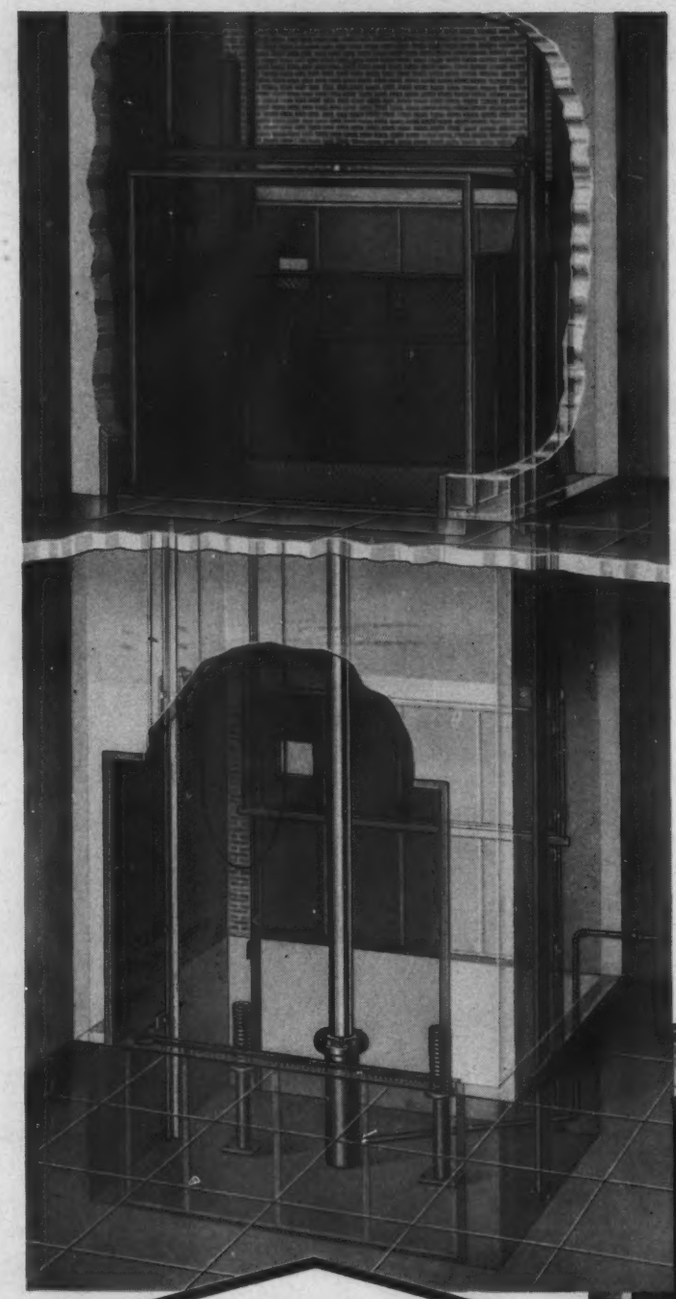
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Geoffrey Baker;

Oildraulic® Freight Elevators H



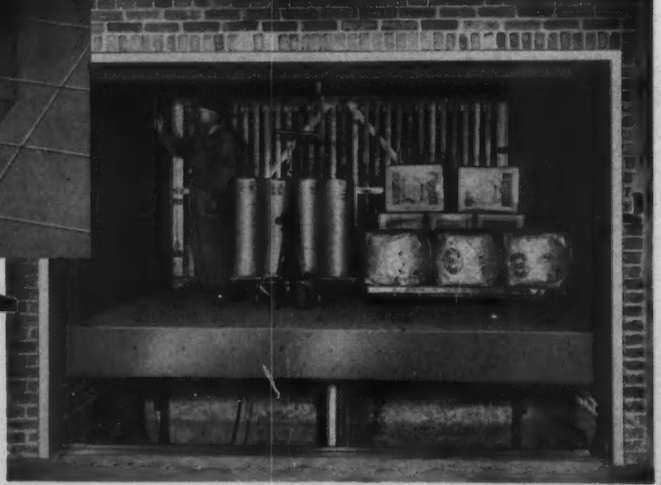
Elevator is pushed up by powerful Oildraulic Jack . . . lighter shaftway structure required.

1. LOWER CONSTRUCTION COSTS

Oildraulic Elevators simplify building design—no penthouse needed

You can usually cut construction costs materially by specifying Oildraulic Elevators. This modern elevator is pushed up from below, not pulled from above, and the powerful hydraulic jack supports all the load of the elevator and its contents. This eliminates the costly, unsightly penthouse and also permits a substantial lightening of the shaftway structure. There's no need for heavy, load-bearing sidewall supporting columns and footings ordinarily required to carry the elevator car, overhead machinery, and the load. A special machine room can usually be dispensed with, too, because Rotary's compact power unit can be located at any convenient spot, on any landing, on any side of the hatchway—anywhere within 50 feet of the elevator.

These structural simplifications also make the Oildraulic Elevator ideal for installation in existing buildings where elevator service is being initiated or expanded.



rs Have 3 Big Advantages

2. HEAVY-DUTY SERVICE



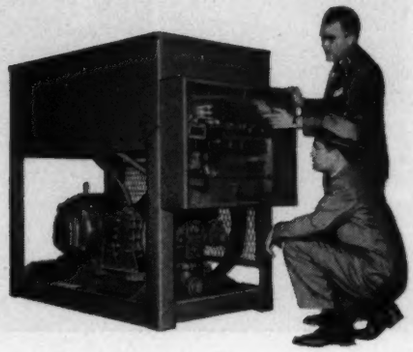
Some of the largest freight elevators in service are Rotary Oildraulics

Their basic operating principle (fluid under pressure) is ideal for freight service. Whether the load is little or great it is moved with the same efficiency. Power is applied directly to the load; there is no lost motion. The car will not move downward as heavy loads are rolled in, because the elevator is supported on a solid column of oil.

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WRITE FOR A. I. A. FILE

See Section $\frac{33a}{Ro}$ in Sweet's Architectural File and write us for catalog and complete information on Rotary Oildraulic Elevators. Our Engineering Department will be glad to work with you on preliminary layouts and specifications.

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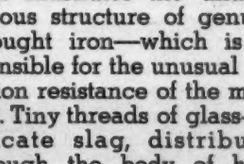
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ARCHITECTURAL RECORD

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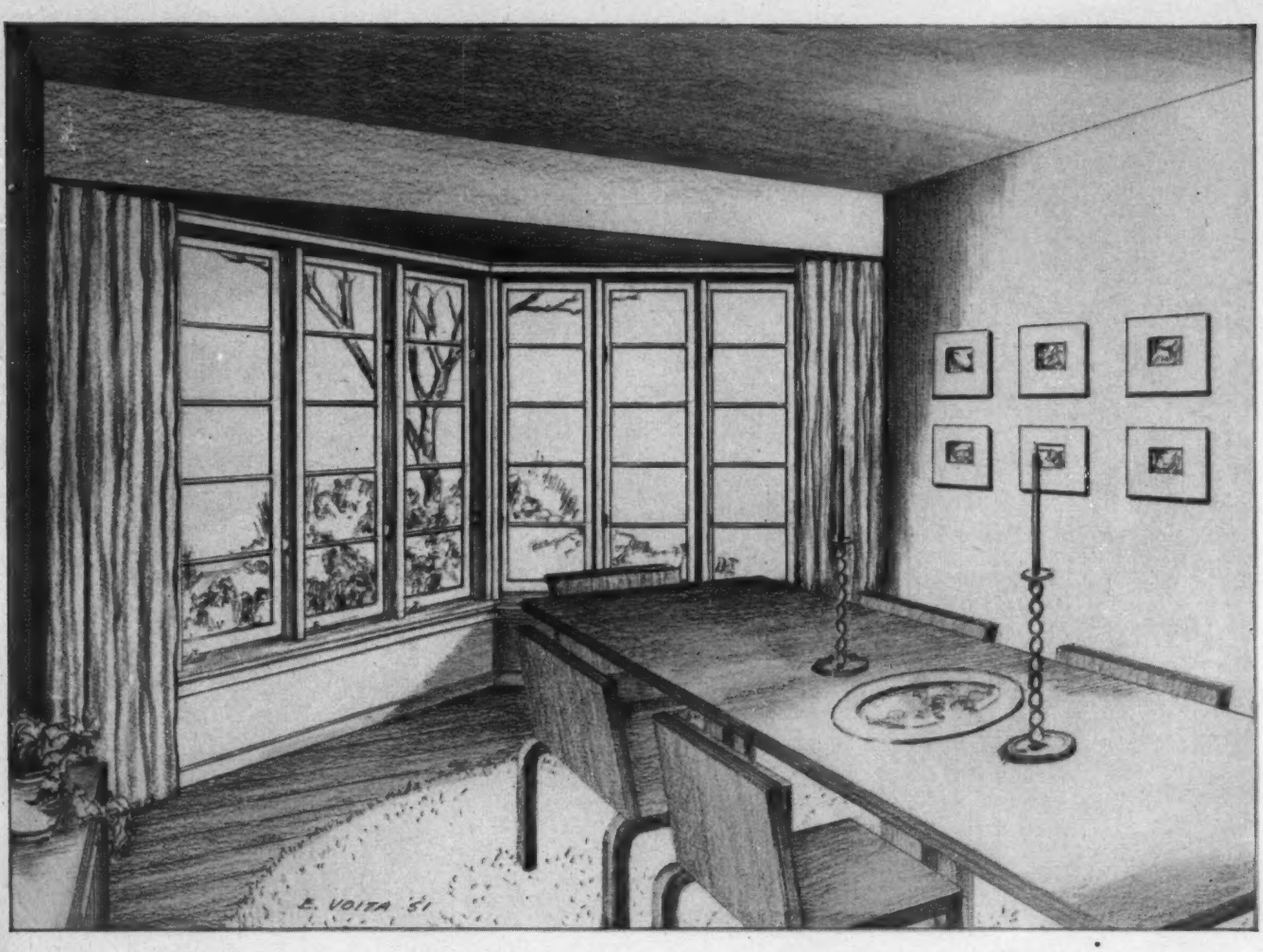
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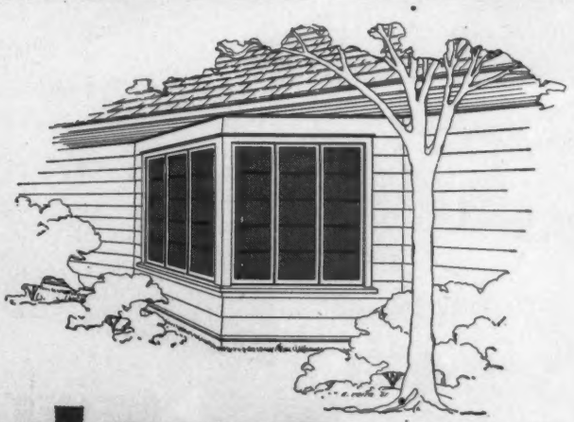
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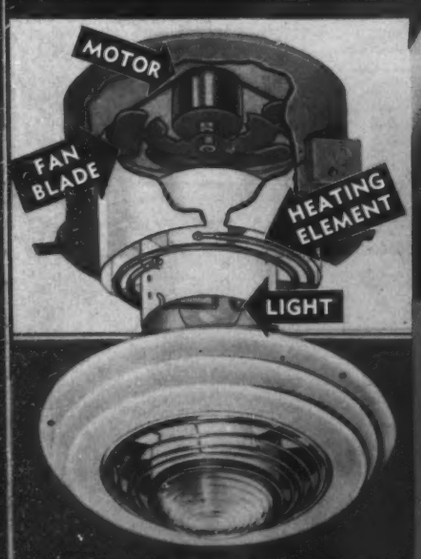


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THE RECORD REPORTS

MAY CONTRACTS AWARDED SET NEW ALL-TIME HIGH

CONSTRUCTION CONTRACTS awarded in the 37 states east of the Rockies in May reached by far the highest total of any month on record, F. W. Dodge Corporation reported.

The month's total of $2,572,961,000 compared with the previous all-time high of $1,548,876, set last August. It topped the May 1950 figure by 91 per cent and April 1951 by 87 per cent; and it brought the total for the first five months of 1950 to $7,399,177, 34 per cent above the total for the corresponding period last year.

Three Atomic Energy Commission projects with awards totaling $980,000,000 helped to boost the nonresidential classification and the general total in May; but even without them the figures would have topped August 1950 by $44,085,000.

Residential awards of $661,094,000 were 12 per cent above April 1951 but two per cent under May 1950. Nonresidential contracts totaled $1,633,908,000 in May, 215 per cent over April and 300 per cent over May 1950. The residential total for five months was six per cent over the same period 1950.

Monthly Total Double 1933

Dodge records, which go back through 1925 for the 37 states (and 60 years for lesser areas) show that May's $2.5 billion was more than twice the total for the entire year of 1933 and far exceeded the yearly totals for the depression years 1932 through 1935.

The award total for 1925, Dodge's first year with 37-state totals, was $6,006,428,000; for 1928, $6,628,285,000; 1929, $5,750,791,000. The figure for 1944, $1,994,016,000, was less than the May 1951 total.

Contract award total for 1950, which topped all previous records for dollar volume, was $14,501,055,000.

GROUP FORMED TO ADVISE HHFA ON MODULAR SYSTEM

MODULAR COORDINATION gets new encouragement from establishment of an industry advisory committee to consult with the Housing and Home Finance Agency on the subject.

Members of the committee are: John E. Burchard, dean of Humanities, Massachusetts Institute of Technology; William Demarest Jr., secretary for modular coordination, American Institute of Architects; Carl B. Lans, technical director, National Association of Home Builders; Knud Londberg-Holm, research director, Sweet's Catalog Service; William H. Scheick, executive director, Building Research Advisory Board; and Robert B. Taylor, director of research, Structural Clay Products Research Foundation.

The first item on the agenda of this committee's initial meeting was a re-

(*Continued on page 12*)





British Travel Service photos

A.I.A. TOUR GROUP AT CAMBRIDGE. *Photographs above show several of the 17 architects who made the spring tour of Europe arranged under the aegis of the American Institute of Architects and led by Harold Sleeper, F.A.I.A. At left, foreground: Charles F. Cellarius, F.A.I.A., Cincinnati; Dean H. K. Harrison, King's College, Cambridge; Mr. Sleeper. Right: James R. Edmunds Jr., F.A.I.A., Baltimore, and Raymond J. Ashton, F.A.I.A., Salt Lake City, both past presidents of A.I.A.; Dean Harrison; Mr. Cellarius*



Indiana officers and the chapter charter: Allison Vrydagh, Gerald Brubaker, Donald Compton (retiring as president), Lloyd V. Moser and Arthur Wupper

INDIANA ARCHITECTS HOLD ANNUAL MEETING; LLOYD V. MOSER NAMED AS NEW PRESIDENT

LLOYD V. MOSER of Indianapolis was elected president of the Indiana Society of Architects at the society's annual meeting at Indianapolis last month.

Other officers elected were: Arthur Wupper, Indianapolis, first vice president; Carroll O. Beeson, Crawfordsville, second vice president; Miss Juliet Peddle, Terre Haute, secretary; Robert F. Daggett Jr., Indianapolis, treasurer; Gerald Brubaker, Elkhart, and Allison Vrydagh, Terre Haute, directors.

Donald E. Compton, retiring president, introduced the new officers at the dinner meeting and presented the chapter charter to the new president.

An architectural exhibit which was open to the public for a week after the meeting led in interest for the 75 architects and their guests at the session.

GROPIUS STRESSES VALUE OF TEAM FOR ARCHITECTS

THE VALUE OF TEAMWORK both in the design process and in the development of individual architect members of the team was urged by Dr. Walter Gropius of Harvard in his talk at the 1951 Gold Medal Award dinner of the Architectural League of New York in June.

Doctor Gropius said that the fusion of art, science and business which architecture requires can be achieved only when the architect joins hands with the engineer and the contractor to make himself a real part of the production process. The kind of teamwork practiced by his own firm, The Architects Collaborative, he called a first step.

The League's 1951 Gold Medal in Architecture was accepted by Doctor Gropius on behalf of TAC for the Harvard Graduate Center. Other Gold Medals were awarded to: Thomas D. Church Associates (landscape architecture); Dean Cornwell and Sante Graziani (mural painting); Donald DeLue (sculpture); Henry Dreyfuss (industrial design).

MODULAR COORDINATION

(*Continued from page 11*)

view of work being done at the Illinois Institute of Technology in the field of uniform dimension as a practical avenue toward cost savings in construction. The Institute is under contract with HHFA to prepare a new guide for dimensional standardization of building elements and components based on the four-in. module principle.

Konrad Wachsmann is in charge of the work at Illinois. It is estimated that nine months will be required to develop and publish the information.

Explaining his plans to the advisory group in Washington, Professor Wachsmann said he favored sending questionnaires to manufacturers of building products, asking information on their experiences with production of items in four-in. modules. If these returns can be gathered by the end of July, the Illinois Tech staff would spend August and September analyzing and compiling the data. The following two months would be devoted to collating the material and preparing it for publication. Thus, the final report would be available by the end of next January.

It is believed the project can give strong impetus to the modular coordination idea. For one thing, it will be one of the most comprehensive studies of its kind conducted to date on this subject. Not a new field for Illinois Tech personnel, modular coordination as a broad subject has been one of their working programs for some time. The school has a rather extensive library on use of the uniform dimension and has recorded some of this material on microfilm.

The questionnaires planned by Professor Wachsmann will bring in data to supplement what is already on hand. They are to go to equipment dealers as well as building material producers.

Slanted toward greater economy in home construction, the survey may result in a historical compilation of all existing well-known modules and all standardized sizes currently used.

Here are some of the things the project sets out to determine:

1. The effect of source of raw materials on finished dimension of the product.

2. Applicability of modular coordination to manufacture of present building materials and adaptability of the principle to new materials.

3. The effect of machines on production methods in the modular coordination system.

4. Structural requirements of materials or assembly of materials as a means of determining maximum dimensions.

5. Integration of mechanical equipment to the finished product.

6. The effect of labor and code requirements as applied to use of modular coordination in construction.

7. Saleability of the product manufactured by this method.

8. Financial arrangements necessary to achieve profits. In other words, will a plant have to be entirely rebuilt to produce the item in module and what is the feasibility of such a move?

The Structural Clay Products Institute, strong supporter of the modular coordination idea, claims that architects and builders who have taken the time to acquaint themselves with the principle and to use modular design in construction have found that it can simplify both design and construction and lower building costs. The Institute devoted an earlier issue of its "Technical Notes" to modular clay masonry — A.I.A. File No. 5A or 10A.



Mogenson (left) and Peterson (right) hold the winning models. Center: Dr. Snoke

TWO CHOSEN AS WINNERS OF HOPPER COMPETITION

TWO STUDENTS in the Yale Department of Architecture, Arnold C. Mogenson of Denver and Warren A. Peterson of Jamestown, N. Y., have been selected as winners of the Magnus T. Hopper Fellowship in Hospital Architecture.

They submitted separate solutions for the problem, which this year was a 125-bed hospital to serve a New England industrial town of 35,000 people. The hospital had to be designed to permit future expansion to 200 beds and possible construction of a medical office building for doctors.

Winners receive $1500 for tuition plus $500 for books and travel for one year of specialized hospital studies at the graduate level. Mr. Mogenson, now a graduate student, will study under the Fellowship in 1951–52, while Mr. Peterson, a third-year student, will receive the grant in 1952–53.

The Hopper Fellowship was established at Yale last year in memory of the former medical director of the Carson C. Peck Hospital in Brooklyn. Its purpose is to focus attention on the many-sided problem of hospital design.

Judges in the competition were: Chairman George Howe of the Department of Architecture; Dr. Albert W. Snoke, professor of Hospital Administration and director of the Grace-New Haven Community Hospital; Prof. Ira V. Hiscock, chairman of the Department of Public Health; Theodore Crane, professor of architectural engineering; Carl Holzinger, New York architect; Charles F. Neergaard, hospital consultant of New York; Marshall Shaffer, hospital planning official for the U. S. Public Health Service; Edward D. Stone, New York architect; and Helge Westermann, architect and hospital consultant of New York.

$25 MILLION LEVER UNIT OPENED IN LOS ANGELES

A MAJOR UNIT in the current expansion program of Lever Brothers Company swung into operation last month with the formal opening of the $25 million soap, detergent and shortening plant in Los Angeles.

Engineer and builder of the new unit was the Bechtel Corporation, under the immediate direction of Jerome K. Doolan, a vice president, and Jerome Komes, manager of the industrial division. Welton Becket of the firm of Welton Becket and Associates was consulting architect.

More than 415,000 sq ft of floor space are provided in the present center. The six buildings cover about a third of the 30-acre site, which has been laid out to permit expansion of manufacturing and warehousing facilities.

Location of a large portion of the processing equipment outdoors to take advantage of the warm, dry climate is an innovation in the soap, detergent and edible field. Some automatic equipment is completely in the open; some, requiring frequent attention by workers, is protected by roofs alone.

All buildings are constructed of reinforced concrete and steel. Core of the plant is a four-story office and laboratory building, flanked by a five-story soap finishing and packing building on the east and a six-story shortening products finishing building on the west. Stair towers are used to connect the office building directly with the two product finishing buildings. Directly behind the main buildings and connected to them by two 87-ft clear span bridges at the fourth floor level are the processing buildings for the soap and oils. Separating the two processing buildings are the boiler plant and the refrigeration units. The other service units, consisting of a large hydrogen generating plant, tank farms, water tower, cooling towers and fuel storage, are located at various points to the rear of the site.

The plant will employ about 500 persons at capacity. Facilities for employees include a restaurant seating 260; and a nine-room health and medical clinic.

The triangular site is seven and a half miles east of the center of Los Angeles in the Central Manufacturing District of Los Angeles County.

New Hampshire architects and contractors held their first joint meeting recently. Below: President Maurice Witmer, A.I.A.; Governor Sherman Adams; and Robert Foster, New Hampshire president A.G.C.





The new Los Angeles plant of Lever Brothers Company went into production last month. Bechtel Corporation was engineer and builder; Welton Becket, consulting architect





Courtesy of House & Garden

"Living" wing opens on sheltered porches, central patio. Above: children's room has folding wall for partitioning and exits on separate terrace outside bedroom wing

HOUSE & GARDEN OPENS ITS "HOUSE OF IDEAS"

THE "HOUSE OF IDEAS" at Upper Brookville, L. I., sponsored by *House & Garden* Magazine and designed by Architect John Callender in association with Allen and Edwin Kramer, was opened to public view last month.

For purposes of the project, *House & Garden* became a family of four with a $45,000 budget for both house and land. By the time the seven-room house was completed on its two-acre plot, the client was "badly scarred but not irretrievably maimed" financially. The cost was $56,137.96, not including land, architect's fees or landscaping. Some of the original requirements had been dropped or modified to cut costs; but close and continuing cooperation of "client," architect and Builder Cy Williams had achieved all the major aspects of the program.

The house is built all on one level in three wings — service, living and bedroom — around a center patio; and the bedroom wing has its own terrace, intended to double as play area.

The entrance gallery, with a window wall facing the patio, separates the bedroom wing from service and living wings. The living-dining room, 16 ft 2 in. by 31 ft, also has a window wall facing the patio, and covered porches on two sides.

In the service wing are kitchen, with compact laundry center; maid's room and bath; and heater room.

The bedroom wing has a study-guest room, children's room and the master bedroom and its bath-dressing room. Guest room and children's room also have their own baths. The children's room has an accordion wall for partitioning at will. Each bedroom has a door to the terrace.

Macy's New York furnished the house for *House & Garden*. Radiant heating installation and complete kitchen equipment (but not other furnishings) were included in cost of the house.



Damora

Members of the Architectural Photographers' Association held their third exhibition at Architectural League of New York May 22 to June 2. Photo shows part of large display

ARCHITECTS, STAFF MEN HOLD HOSPITAL SEMINAR

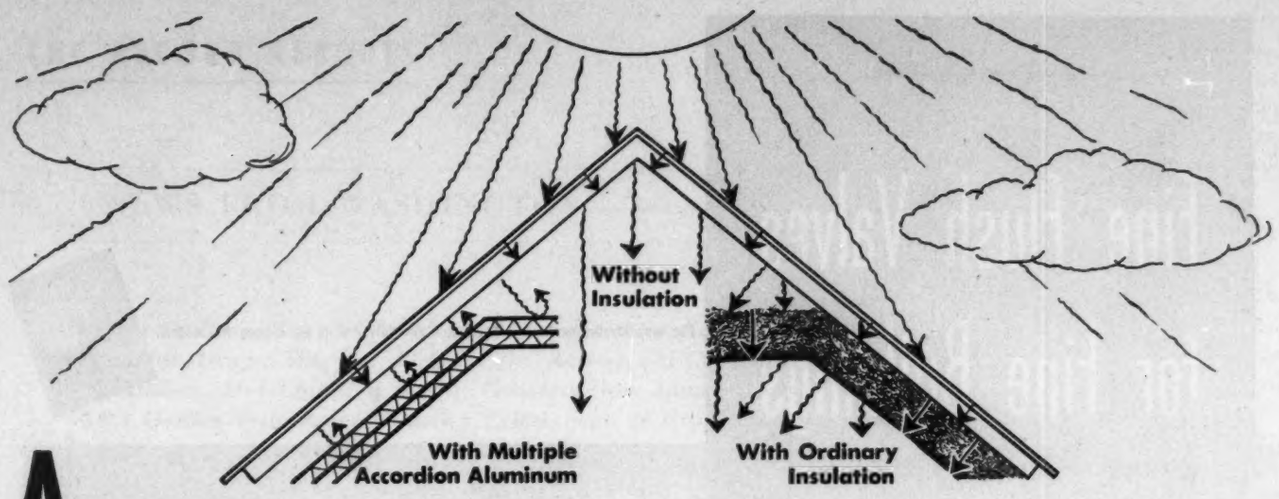
THE TEXAS SOCIETY of Architects and the Texas Hospital Association were the joint sponsors of a hospital construction seminar and exhibit of recently built Texas hospitals held in conjunction with the Texas Hospital Association's 22nd annual convention in San Antonio.

Some 85 people, about equally divided between architects and hospital personnel, attended the seminar session.

Raymond Phelps, president of the architects' group, welcomed the guests and stressed the importance of cooperation between architects and hospital administrators in achieving good hospital planning.

The entire seminar was based on a round-table discussion of the new Uvalde (Tex.) Memorial Hospital. This 40-bed hospital was analyzed in detail on planning, construction and administrative problems.

Panel participants were Joe Carper, president of the hospital board; Joe Smyth, architect; T. H. Morrison Jr., and Bert W. Dickinson, former and present administrators; and George W. Holderness, architect. L. H. Gunter, assistant manager of the Veterans Administration Hospital in Houston, Tex., summarized the presentation.



An Empty Roof Space Would Be The Best Insulation Against Summer Sun, *Were It Not For Radiation*

Convection is not a problem — there is no Convection downward. The only heat flow in summer through an empty roof space is Radiation, except for insignificant Conduction. Heat flow by conduction through roof spaces — through any building air space — is about 5%.

Ordinary insulation may retard heat for two or three hours, but builds up a large heat storage as compared to empty space. Fairly solid, it is a much better conductor of heat than empty air. Its surfaces absorb more than 90% heat rays. The heat passes through it by conduction, and is then radiated into the rooms at a 90% rate all through the day and into the night.

The solution is to use a material which has little substance and whose surfaces will not absorb nor emit appreciable radiation. Silver foil would be excellent but tough multiple accordion aluminum, which weighs but 1/5 oz. a sq. ft., is inexpensive and has practically the same heat-ray absorption and emissivity (2% more). It absorbs only 3% of the preponderant radiant heat flow through building air spaces inside walls, ceilings and roofs, and emits but 3%. It is non-condensation forming, impervious to vapor, and its multiple air spaces practically eliminate conduction. The commercial form is Infra Type 4 and 6.

The National Bureau of Standards Booklet BMS52, "Effect of Ceiling Insulation upon Summer Comfort," lists on page 10, the "insulations tested" in the order of decreasing effectiveness in protecting the ceiling against summer heat, as follows:

"1) Two layers aluminum foil (both sides of each layer reflecting).

"2) Full thick (3⅝") rockwool."

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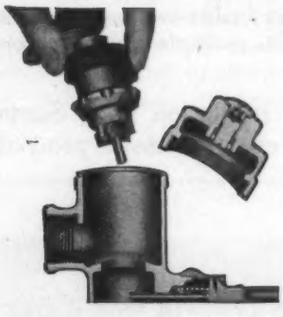
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NEWS FROM WASHINGTON *by Ernest Mickel*

Bomb Shelters: Four FCDA Manuals Expected by August 15; Congress Drops Aid, A.I.A. Calls for Action; AEC Pushes Expansion; M-4 Changed Again; Construction Advisers Say NPA Denies Full Role; Housing Crisis Seen if Curbs Stay

ALL FOUR MANUALS in the civil defense series on shelter construction will be available to architects and engineers by August 15, if the schedule set last month is kept. Release of the first of the long-deferred publications was set for mid-June. Title: Identification of Shelter in Existing Buildings.

There were to follow, in this order, three others: Strengthening of Existing Buildings for Shelter; Design and Construction of Large or Communal-Type Shelters; and Construction of Home-Type Shelters. All these treatises, complete to detailed specifications and with some drawings, are being based on comprehensive information gathered in tests at Lehigh University, Bethlehem, Pa.

The Federal Civil Defense Administration, which has charge of the project, had promised the publications earlier in the year, and architects have been awaiting them eagerly, not to say impatiently. One of the resolutions passed at the 83rd annual convention of the American Institute of Architects in Chicago May 8–11 scored the FCDA for the delay.

But bureau red tape and publication problems have beset the agency. First results of the Lehigh University tests began coming in nearly three months ago. The first manual has been in the works for many, many weeks. Only the first of June, however, did it show signs of emerging, and Ray Spencer, an executive in the administration's shelter division, said he hoped the series of four would be completed within two months from that time.

By now, the University's Institute of Research has supplied the basic data for all the manuals and it is a matter of compiling this information in final form and getting it cleared through channels — and printed at the busy U. S. Government Printing Office.

The first booklet, on identification of existing structure space suitable for shelter, naturally holds the attention of the architect and engineer. It initiates a new phase of the current controversy over what building types are best suited for conversion to bomb shelters, what parts of these buildings should be reinforced and how it should be done. The succeeding volumes are to discuss these architectural and engineering details, with emphasis on phases of design.

The Lehigh tests were conducted under contract with the Army Corps of Engineers. They have no direct relation to the most recent and highly-publicized Eniwetok bomb blasts conducted under supervision of the Atomic Energy Commission. However, Mr. Spencer explained carefully that authorities were making sure there would be no conflict in the Lehigh and Eniwetok findings. As he put it: "Nothing we publish will be disproved by the Eniwetok tests."

Congress Scuttles Shelter Aid

The Commission has revealed few details on results of its Eniwetok blasts. At Eniwetok, some 900 measurements were made on 27 different structures. Tests were also made for FCDA on a variety of window and glass construction. Detailed data is promised in August. When these results are brought out for public scrutiny, they will form another focal point for architect and engineer attention — and possibly argument.

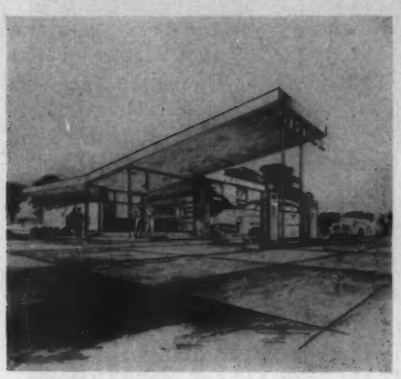
The apathy charged to the FCDA by the American Institute of Architects in the agency's creeping program on shelter design and construction was not likely to be dispelled by the attitude of Congress to the program. When all the Capitol Hill argument was sifted out of the committee hearings and Congress got around to voting appropriations for civi' defense, the House of Representatives whittled the original FCDA asking of $403 million down to $186 million with a minimum of emphasis on federal aid for shelter construction. The Senate,

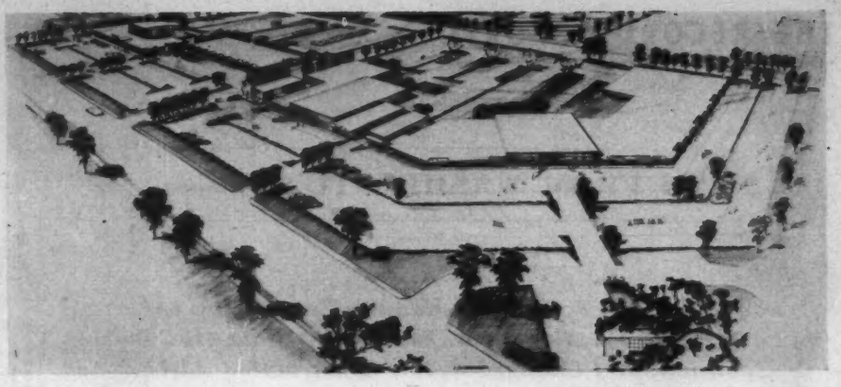
(*Continued on page 20*)



— Drawn for the RECORD by Alan Dunn

"Now, class, it is essential that you have a thorough knowledge of the Ionic capital, in case you are ever called on to design a coffee table for a modern room —"





Crang Plaza Shopping Center, North York (above) and Shell Service Station (left) at entrance. Site, plan and layout: E. G. Faludi; Leo E. Venchiarutti, Architect

NEWS FROM CANADA *by John Caulfield Smith*

Five Central Shopping Areas In North York's Master Plan

THE TOWNSHIP of North York, bordering Toronto on the north, is ready to enact a master plan establishing five centralized shopping areas. The proposal will become effective, through the medium of a zoning bylaw, as soon as it is approved by the Ontario Municipal Board.

In the past, oblivious to the way in which better shopping facilities were being developed in such centers as Montreal and Vancouver, new districts in the Toronto area have over-exploited their land. Stores have been crowded cheek-by-jowl right up to the sidewalk, without recognition that most of the people to be served would arrive by automobile. Result is a serious lack of parking space. The new master plan provides that each shopping center will have twice as much land devoted to "car parks" as to stores.

The master plan was produced by the township planning board and council, in collaboration with Town Planning Consultants Ltd. It visualizes a 100 per cent population increase, to 135,000 persons, within the next 10 to 15 years. Intention is to guard the municipality's growth in sensible, orderly fashion. Commercial structures will be concentrated within certain designated areas. No more "ribbon developments" will be permitted to line heavily travelled roads with stores and other buildings, delaying traffic and endangering pedestrians.

It's a move that's been long overdue. Had such a scheme been adopted in the early postwar years, the spotty suburban growth that characterizes metropolitan Toronto might have been avoided. As it was, demand for cheap land led to premature subdivision of farm properties, and little clumps of buildings scattered here and there now prejudice creation of well-organized, efficiently functioning communities.

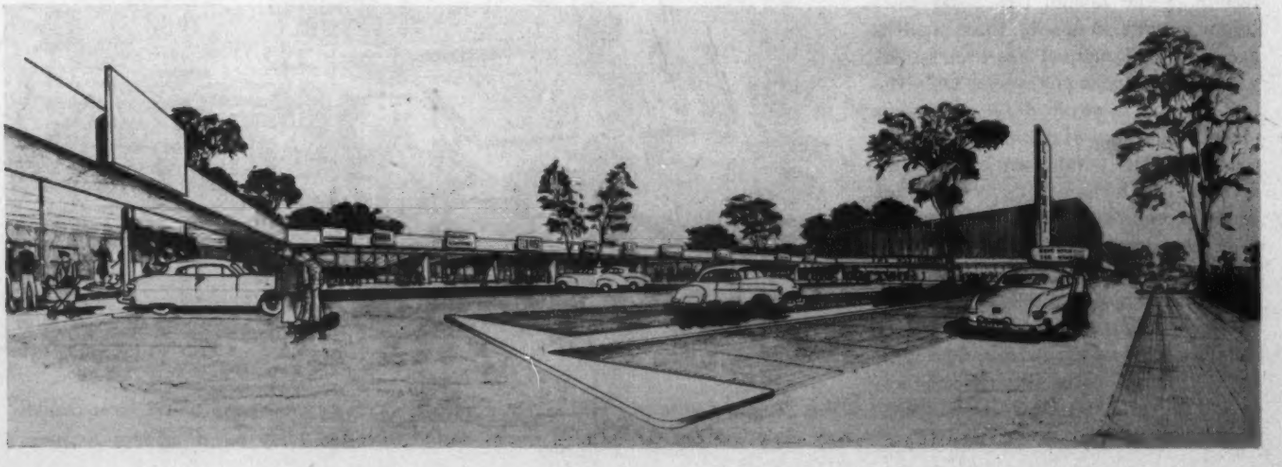
North York's plan will do much to remedy this condition, and will help the municipality make a fresh start. Of course, the plan covers more than shopping centers. There are many provisions affecting other phases of real estate development. For instance, future housing projects will be directed into two new residential areas, both of which can be readily provided with water and sewerage facilities.

The township has already acquired and set aside extensive blocks of land for industrial development. After the essential services are installed, this land will be sold at cost to manufacturing concerns.

Obnoxious industries, which might

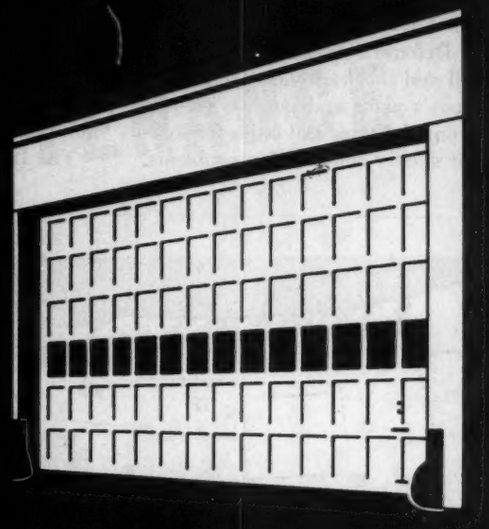
(*Continued on page 244*)

North York's Winston Park Development; E. G. Faludi, site plan and layout; Leo E. Venchiarutti, Architect



INDUSTRY'S HIGHEST HONOR AWARDED TO CRAWFORD DOOR COMPANY





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WASHINGTON (*Cont. from p. 17*)

in turn, struck out all funds for this purpose, and the bill rode through conference and final vote of both houses with the federal aid deleted.

Civil Defense Administrator Millard Caldwell said this took the starch out of his agency's plans and put too great a burden on the states and cities for solving their shelter construction problems.

Public Funds Needed: A.I.A.

Meanwhile, the A.I.A. blamed lack of public funds for the failure to begin any civil defense shelter program. It supports the system of federal aid for constructing shelter facilities in privately owned buildings.

The Institute's attitude was summed up in a policy statement by Edmund R. Purves, executive director, who said:

"So-called dual-purpose shelters have failed to pass critical examination by experts in Los Angeles, Chicago, New York, Boston and other big cities. Bomb shelters can't be used part of the time for garages, nor can they be [financially] self-liquidating. Big shelters, however designed, are impractical because of the short warning period defense authorities assume.

"Our architectural experts have concluded that on-the-spot shelter will have to be provided in offices, homes, factories, schools, hospitals and other places where people may be. Generally such shelter will take the form of protective construction and reinforcing of existing buildings, although some new shelter facilities may be desirable.

"Tenants and building owners have shown themselves reluctant to undertake such work at their own expense. This is understandable. But until public policy is clarified, nothing will be done to provide the only fast and economical form of shelter anyone has yet devised."

A.I.A. Has Manuals Out

Mr. Purves also called attention to a series of Institute reports on civil defense measures, published to guide its own members. The principal booklet — "Civil Defense: the Architect's Part" — covers such points as technical services, training, aerial attacks, effects of bombs on buildings, survey and organization of buildings, shelters, evacuation, housing and repair of war damage.

The supplementary pamphlets take up special topics — defense measures in multi-story buildings and defense measures in schools. Others are expected to follow.

This effort reflects the architects' conviction that much more emphasis should be placed on civil defense shelter than has been given it in public or private quarters.

AEC Pushes Expansion

And while the shelter controversy continues, the Atomic Energy Commission forges ahead with its expansion program. This is truly big business. The magnitude of the Commission's expenditures has been outlined as follows:

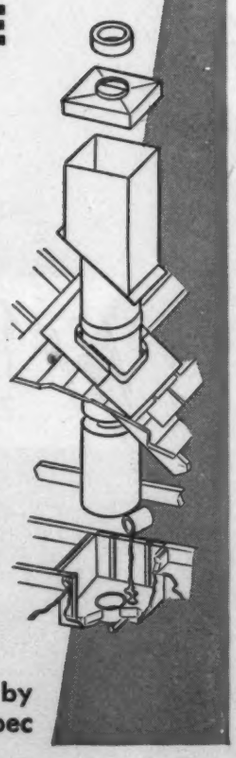
Through the fiscal year 1951, AEC expended for development of atomic energy nearly $5 billion. An additional

(*Continued on page 22*)



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at OAK RIDGE, TENN.
and
HANFORD, WASH.



FEDERAL-*featherweight*

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HANNEL ROOF DECK SLABS for e with composition covering. AILING CONCRETE SLABS to id securely, slate, tile, copper other ornamental roof.

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SOME OF MANY U. S. GOVERNMENT BUILDINGS

Amertorp Corp., Forest Park, Ill.
National Guard Armories Throughout the Country.
Rock Island Arsenal, Rock Island, Ill.
U.S. Army Veterans Hospital, Phoenix, Ariz.; St. Cloud, Minn.; Iron Mountain, Mich.
U.S. Army Victory Ordnance, Decatur, Ill.
U.S. Army Phosphate Plant, Muscle Shoals, Ala.
U.S. Naval Hospital, Dublin, Ga.
U.S. Naval Ammunitions Depot, Hastings, Nebr.
U.S. Naval Ordnance Plant, Pocatello, Idaho.
U.S. Naval Ammunitions Depot, Savanna, Okla.
U.S. Naval Ordnance Plant, Shumaker, Ark.
U.S. War Dept. Martin Bomber Plant, Fort Crook, Nebr.

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WASHINGTON (*Cont. from p. 20*)

$1.5 billion was appropriated by Congress and committee but not spent as of July 1. The over-all figure of $6.5 billion includes expenditures of both the AEC and its predecessor, the Manhattan District, which developed the first atomic bombs at a cost of more than $2 billion.

Operating expenses of the Commission for the past fiscal year approximated $400 million. The largest new plant in the current expansion program is the $900 million project near Aiken, S. C. When all the new plants are in operation, AEC will be the largest single user of electrical power in the country.

This current emergency expansion program is expected to double the book value of plant and equipment. A very large share of the AEC outlay goes into plant construction. The complexity of processing atomic energy materials and the high cost of protecting workers and environment from the ever-present radioactivity are factors that cause the cost of this type of building to skyrocket in comparison with conventional construction.

Automatic equipment, remote control devices, heavy shielding and elaborate ventilating, waste and disposal systems may increase construction costs up to tenfold over normal plant requirements, an AEC commissioner said.

Controls: What Next?

While Congress slapped down the FCDA without public funds for shelter construction aid in fiscal 1951, it was concentrating most heavily on debating extension of the Defense Production Act of 1950. This subject temporarily took a back seat in national interest to the hearings on the MacArthur dismissal and Far East policy — but it remained as the most vital single piece of legislation for the continued operations of business and industry. The entire structure of government controls — price, wage and materials — hinged on the final outcome of this secondary "great debate."

The construction industry, involved in its differences with the National Production Authority, stood to gain or lose largely from the outcome of Congressional hearings and the decisions. No one doubted there would be a continuation of the controls programs. The question was the extent to which Congress might alter the 1950 law. Would it weaken or strengthen authorities granted last year?

Meanwhile, NPA continued to issue its amendments and interpretations of Construction Order M-4 and to plan for July 1 activation of its long-awaited Controlled Materials Plan guiding pound for pound the distribution of major quantities of steel, aluminum and copper.

M-4 changes included an amendment (May 11) exempting the construction of industrial plants, facilities or factories for which a Certificate of Necessity has been issued from all restrictions of the order; granting a specific small-job exemption to permit construction of additions, improvements or modernization of industrial plants, factories or other facilities where the total steel used will not exceed 25 tons; making unmistakable the application of M-4 restrictions placed upon the construction of gymnasiums, printing, duplicating and pub-

(*Continued on page 24*)



The Bureau rating plate is available to all manufacturers who meet its quality standards and requirements.

This truck mixer rating plate is what enables architects, engineers and contractors to confidently buy more than $300,000,000 worth of ready-mixed concrete a year.

It guarantees at a glance the proper drum design and speed, accuracy of water control *and full amount of free mixing space* needed to properly mix or agitate a rated batch.

Always look for this rating plate in order to avoid questionable concrete from non-standard truck mixers.

Truck Mixer Manufacturers Bureau

BLAW-KNOX DIVISION, Pittsburgh, Pa.
CHAIN BELT COMPANY, Milwaukee, Wis.
CONCRETE TRANSPORT MIXER CO., St. Louis, Mo.
THE JAEGER MACHINE COMPANY, Columbus, Ohio
THE T. L. SMITH COMPANY, Milwaukee, Wis.
WORTHINGTON PUMP & MACHINERY CORP., Dunellen, N. J.

"Off-the-Shelf" DELIVERY USING THESE STANDARDIZED COMPONENTS

New Square D MHP DISTRIBUTION PANELETTE



DESIGN LEADERSHIP

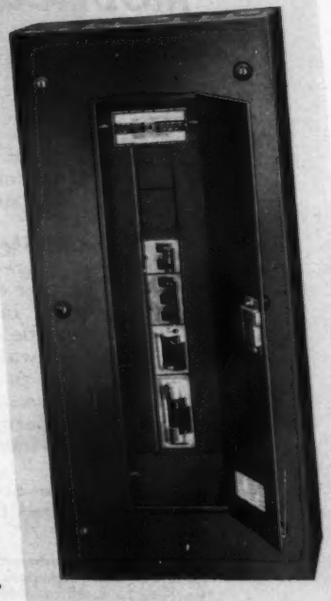
See Square D's new **MHP CIRCUIT BREAKER DISTRIBUTION PANELETTE** for 240 Volt, 3 Phase, 3 or 4 wire power systems. Varying job requirements can be met by using different combinations of standardized components available from Electrical Distributor stocks.

1 INTERIOR consists of three cylindrical bus bars, neutral plate and necessary barriers firmly supported on an insulated steel pan and equipped with a breaker-retaining trim plate held in place by four thumb screws. Unused breaker mounting space is covered by a scored sliding plate. Extra plate length is easily broken off.

2 "PLUG-IN" BREAKERS are thermal-magnetic. Positive pressure jaws tightly grip round bus bars. Available in 15 to 100 amperes, 240 volts A.C., two and three pole common trip units, for motor loads—15 to 50 amperes, 120 volts A.C., two individual trip single poles per unit, for lighting loads.

3 TRIM has door with directory frame and flush lock with standard keying. Available flush or surface.

4 BOX is 5¾" deep and either 14" (single row) or 20" (double row) wide. Available in four basic lengths with ample knockouts and large wiring gutters.



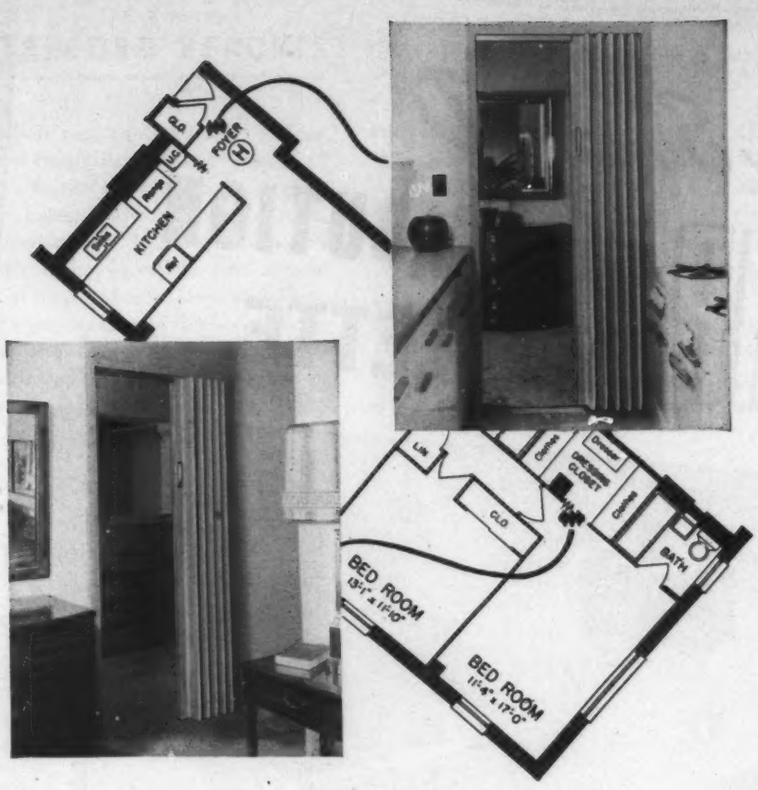
for descriptive bulletin, Write Square D Company, 6060 Rivard St., Detroit 11, Mich.

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"Modernfold" doors provide value as a *permanent investment.* For example, *only* "Modernfold" doors have a double-strength steel framework.

And just as durable are the handsome, Vinyl-coated fabric coverings. They withstand more flexing and abrasion than ordinary leather . . . clean with soap and water . . . won't support combustion.

Why not get the complete "Modernfold" door story—*now!* Write for full information.

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COPYRIGHTED NEW CASTLE PRODUCTS 1951

New Parkmerced Apartments, housing approximately 1700 San Francisco families. New Parklabrea Apartments, housing approximately 2760 Los Angeles families. *Architect:* Leonard Schultze & Associates; *Owner:* Metropolitan Life Insurance Co.; *Builder:* Starrett Bros. and Eken, Inc.



THE RECORD REPORTS

WASHINGTON

(*Continued from page 22*)

lishing establishments and facilities for storage, distribution, display or sale of consumer goods.

Early in June NPA delegated authority to eight government agencies to act on applications to commence construction of projects in certain categories under their jurisdictions.

The eight delegated agencies named in NPA Delegation 14, and the categories of construction involved, are:

1. Administrator of the Federal Security Agency. All school and library construction; all hospital and health facility construction other than the Veterans Administration and military hospitals; all other health and sanitary programs.

2. Administrator of Veterans Affairs. The hospital program of the Veterans Administration.

3. Administrator of the Housing and Home Finance Agency. Housing construction, alteration and repair, except housing and community facilities on federally-owned property under control of the Atomic Energy Commission, and except housing on military reservations.

4. Secretary of Agriculture. Farm construction; food processing and wholesale food distribution facilities within limits of the memorandum of agreement between the Administrator of the Production and Marketing Administration and the Administrator of the National Production Authority.

5. Secretary of Interior. Facilities for departmental programs of the Department of the Interior; facilities for the production, preparation and processing of solid fuels; facilities for the generation, transmission and distribution of electrical power; facilities for the production and processing of certain metals and minerals; facilities for the production and processing of fishery products.

6. Petroleum Administrator for Defense. Facilities for the production, processing, refining and distribution of petroleum and gas.

7. Secretary of Commerce. Bureau of Public Roads programs for highway construction and maintenance of all rural and urban highways, streets, highway equipment repair shops, bridges, tunnels, toll road facilities, and appurtenance installations, regardless of financ-

ing; air navigation facilities; civil airports; shipyards.

8. Administrator of the Defense Transport Administration. Facilities for domestic transportation, storage and port facilities.

Applications on construction in any of the categories involved in the delegation were to be addressed to the appropriate agency in Washington, D. C. except for cases under the jurisdiction of the Bureau of Public Roads, which were to go to the nearest field office of that agency.

Controls agency officials were being queried on reports they planned to abandon conferences with the full Construction Industry Advisory Committee. There had been talk, after the last full session in early May, that NPA might discard the practice of calling the full group just prior to its important decisions on M-4 changes, and hereafter confer with special building industry groups like architects, home builders general contractors, subcontractors, etc., depending upon the type of order change proposed.

No answers were immediately forthcoming; but there appeared to be two factions in high NPA ranks, one favoring the general full industry advisory committee meetings and the other plumping for the special group sessions.

The Defense Production Act of 1950 directed that NPA and other controls agencies confer with industry before making significant changes in their regulations, and the inference was that these consultations should be weighed carefully by the agencies when important decisions are made. Many industry spokesmen feel that the implications of this directive have not been fully recognized by the controls agencies in their operations and have so told the Congressional committees holding hearings on the new bill.

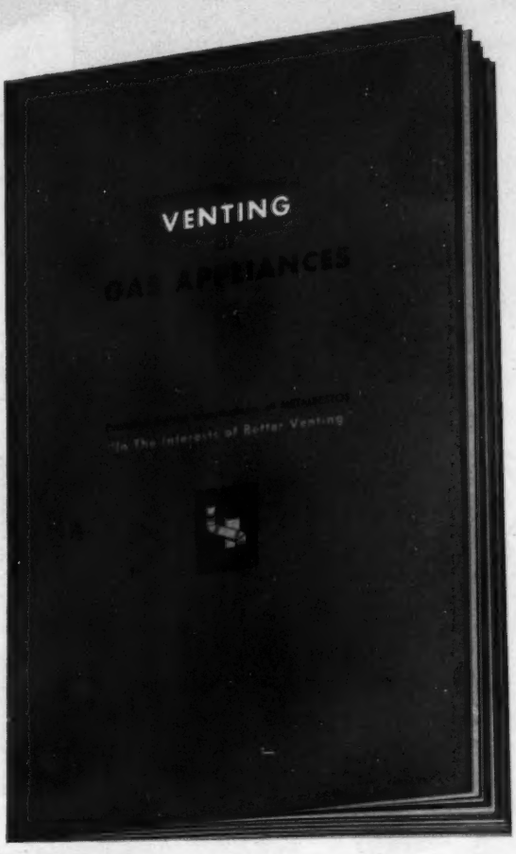
These additional M-4 changes were being planned:

1. Changing over from the $35,000 ceiling on new houses built without NPA authorization to a sq ft basis — probably a "ceiling" of 2500 sq ft per housing unit without NPA license.

2. Clarification of the requirement of NPA authorization for all buildings that will use more than 25 tons of steel. The agency was expected to exempt large residential projects — that is, multiple dwellings and large single-family housing developments — insofar as utility installations, etc., were concerned. NPA had already exempted from all M-4 re-

(*Continued on page 27*)

this booklet gives you
complete information *on*
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—and for help with the temperature control, we'll talk to Honeywell!

Frankly, we'd hate to guarantee any plans drawn up by cartoonist Webb's mountaineers.

But they certainly have one mighty sound idea.

Honeywell *can* help architects and their heating engineers provide the proper thermal environment for any client—anywhere—in any kind of structure.

We have a lot of literature on the automatic control of all phases of heating, ventilating and air conditioning. Information you should have in your files.

And we have a lot of very well informed control engineers—in our 91 different offices—who have a lot *more* information right at their finger tips.

So, why not *talk to Honeywell?* Why not *write* to Honeywell for complete information on the equipment discussed in the column across the page? And why not do it *now?*

MINNEAPOLIS
Honeywell
First in Controls

WASHINGTON

(*Continued from page 25*)

strictions construction of industrial plants and facilities for which a certificate of necessity has been issued.

End of DPA Rumored

There were rumors that Chief Mobilizer Charles E. Wilson was on the verge of disbanding altogether the Defense Production Administration, the agency that sets policy for NPA. DPA was created in January to coordinate all production controls and guide the policies of NPA in allocating materials.

The talk was that most of the functions of DPA would be merged with NPA activities and the balance of its duties distributed to other agencies of government. It was even suggested that DPA powers over granting of five-year tax amortization privileges for tax write-off purposes might be transferred to the Reconstruction Finance Corporation.

Such an adjustment in the controls powers would inevitably strengthen the hand of NPA. Reportedly, all had not been going smoothly between the two industrial controls groups, particularly with regard to certain policy matters in connection with starting the Controlled Materials Plan machinery July 1. The hinted reorganization would remove these differences by giving NPA full authority in this field.

Mr. Wilson's first reorganization move, however, was to name NPA Administrator Manly Fleischmann as DPA Administrator as well. In his dual job, Mr. Fleischmann was expected to achieve closer integration of DPA and NPA activities.

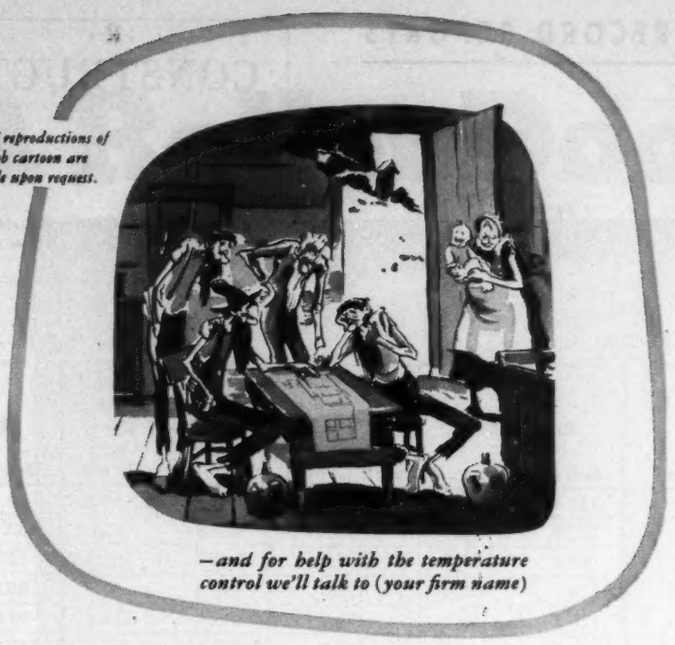
Money: Home Builders' Lament

The nation's private home builders met in Washington — some 300 directors of the National Association of Home Builders — and took a dim view of prospects for their industry. They concluded that unless something was done fast about increasing the flow of mortgage money and about relaxation of Regulation X, their industry would be in its worst crisis since World War II.

These directors pointed to the home builders' record of 1.4 million new housing units started in 1950. But they be-

(*Continued on page 220*)

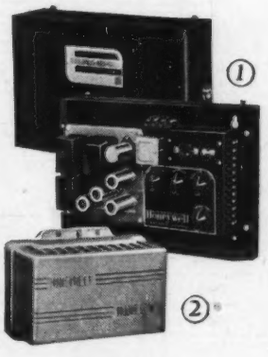
8½" x 9" reproductions of this Webb cartoon are available upon request.



—and for help with the temperature control we'll talk to (your firm name)

For help with any control problem, talk to Honeywell!

Air conditioning, for instance . . .



By applying electronics to air conditioning control, Honeywell has produced a system that's years ahead in design!

It's the world's most sensitive air conditioning control—responds instantly to the smallest change in temperature. This accuracy means no waste of warm or cool air. And it's much simpler—servicing is practically eliminated.

In addition to the electronic relay 1) and space thermostat 2), this system incorporates duct thermostats, immersion thermostats, and motorized valves and dampers.

This system costs your clients less to operate, too—because only when outside air is too warm to use for cooling does the system call for mechanical refrigeration.

So whenever you're planning temperature control for stores, offices, restaurants, theatres or any other kind of structure, be sure to call for Honeywell Electronic Air Conditioning Control.

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MINNEAPOLIS **Honeywell**

First in Controls

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
Feb. 1951	273.3	271.5	262.4	263.6	262.1
Mar. 1951	273.5	271.7	262.7	263.8	262.3
April 1951	273.5	271.7	262.7	263.8	262.3
	% increase over 1939				
April 1951	121.5	122.0	101.0	97.8	101.6

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
Feb. 1951	211.2	212.8	201.0	200.0	201.1
Mar. 1951	212.8	214.4	203.0	201.6	202.7
April 1951	212.8	214.4	203.0	201.6	202.7
	% increase over 1939				
April 1951	146.6	158.0	113.5	107.0	114.0

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
Feb. 1951	248.8	245.2	233.2	236.1	234.7
Mar. 1951	249.0	245.4	233.5	236.3	234.9
April 1951	250.7	247.9	236.4	236.7	235.9
	% increase over 1939				
April 1951	127.5	131.7	99.2	97.6	98.2

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
Feb. 1951	242.5	238.3	236.7	240.4	240.7
Mar. 1951	242.9	238.7	237.2	240.8	241.1
April 1951	242.9	238.7	237.2	240.8	241.1
	% increase over 1939				
April 1951	130.0	140.4	120.0	97.5	107.0

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

HOMASOTE presents

the NOVA Roller Door

—the silent, fingertip flush door for passage ways and closets

—developed through two years of constant research and field testing

Highest in quality . . . simple and inexpensive to install . . . silently responding to fingertip control . . . here is the roller door as you knew it would one day be perfected.

This is a hollow core, flush door—regularly sold in unselected gum, paint grade—which can be painted or stained for many beautiful effects—Black Walnut, African Mahogany, Birch, Red or White Oak.

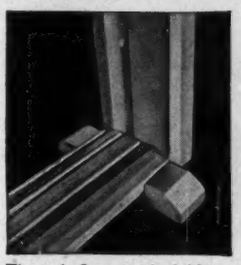
Nova Roller Doors are light, strong and warp-resistant. They are ideal for closets, basement storage, garage storage, storage walls and removable partitions.

The closet may be one of the standard sizes—or extend the width of the room. Two or more doors enclose it entirely. Instead of opening only part of the closet, as with a swinging door, you have full access. And—you don't waste the valuable floor space needed to accommodate a swinging door.

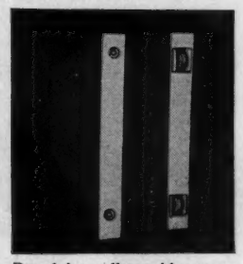
The Nova Roller Door comes cartoned with special side jambs, head and floor tracks and all hardware installed. In less than one hour's time, one man makes the complete installation. *Nine standard opening sizes:* 32″, 36″, 40″, 48″, 56″, 60″, 72″, 84″, and 96″. *Three standard heights:* 6′0″, 6′6″ and 6′8″.

We urge you to write today for the full details. *Kindly include the name of your lumber dealer.*

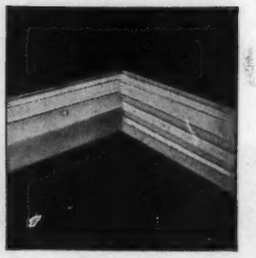




The oak floor track, laid on the finished floor, sets the proper distance between jambs at the bottom. Note rubber bumper on jamb.



Revolving roller guides operate in head track; vulcanized rubber rollers in floor track — assuring silent, fingertip control.



Side jamb (left) is routed to receive the door; head track (right) is accurately machined for perfect operation of revolving roller guides.

NOVA SALES Co. *A Novasco Product*

TRENTON 3, N. J.

A wholly owned subsidiary of the Homasote Company, manufacturers of the oldest and strongest insulating-building board, Wood-textured and Striated panels.



Above: Stockholm's Royal Palace, completed in 1750, although Nordic in concept, reflects Italian inspiration. Below: the Southern Hospital, Stockholm (Hjalmar Cederström, Architect)







Directly above: left, Town Hall, Stockholm, 1923 (Ragnar Östberg, Architect); right, silos, Kvarnholmen Factories (Kooperativa [Olof Thunström & Olof Hult] Architects)



Left: unit from Abrahamsberg apartment project, Stockholm. Photos from SWEDEN BUILDS

REQUIRED READING

SWEDISH ARCHITECTURE

Sweden Builds. By G. E. Kidder Smith. Albert Bonnier (605 Madison Ave., New York 22, N. Y.), 1950. 8½ by 11 in. 279 pp., illus. $8.50.

Ever since Kidder Smith's fine SWITZERLAND BUILDS was published some months ago, this companion volume on Swedish architecture has been awaited with lively interest and curiosity in many quarters. Would the new work be as good as its predecessor? Or better?

Actually, the two volumes are pretty much on a par. Identical in format they follow the same general pattern of presentation. Both are divided into two main sections — one on early architecture and one on contemporary; the second section of each is subdivided into chapters according to building type.



Häverö Church, north of Stockholm in Uppland, dates from 1300, has late 15th century vaulting

The aim of SWEDEN BUILDS, states Mr. Smith, "has been to present to the reader as comprehensive a picture as possible of the primarily visual aspects of Swedish architecture. Design in all its ramifications has been paramount, and structure, economics, sociology, and technical detailing have been subordinated more than was desired but so compacted by an obvious lack of space."

Ten-odd pages in the beginning of the volume, following Mr. Smith's introduction, are devoted to an explanation of Sweden's land policy by the noted Stockholm architect and city planner, Sven Markelius. His discussion of municipal land policies, local, regional and national planning, traffic, housing types, reflects the Scandinavian social responsibility which has made, as Mr. Smith points out, "Swedish cities the park-laced places they are, unspoiled by ruthless speculation." An understanding of the architecture would be incomplete without an understanding of the integrating planning forces which bind it all together.

Most of the book deals with the architecture of the last 15 years. It includes sections on housing (apartments, single and row houses, prefabs), schools, research buildings, hospitals, crematoriums, civil architecture, hotels, restaurants, concert halls and theaters, sports buildings, parks and shelters, shops, offices, industrial buildings and, finally, a section on bridges.

Kidder Smith and his camera have now journeyed far to study various architectures. In this volume he is a long way from Brazil (BRAZIL BUILDS) and Switzerland, and in a sense these first volumes offer more in visual and comparative content than this work about Sweden. Where "native charm" is to be expressed it is perhaps natural to expect more from Switzerland than from the somewhat austere Sweden with its cool, deliberate and highly sophisticated esthetic. Here there *is* more than meets the eye, and the camera can hardly be blamed for failing to catch the less obvious — the frequent mysticism inherent in the Nordic tradition.

(Reviews continued on page 32)

Rolling Steel DOORS



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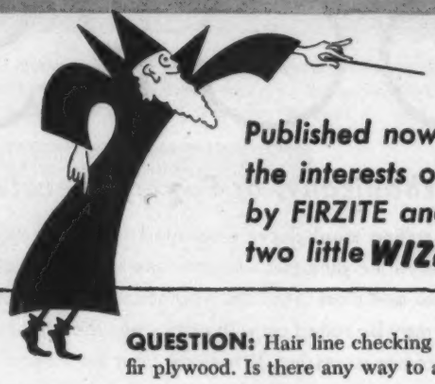


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REQUIRED READING

(Reviews continued from page 30)

AMERICAN ART SINCE 1912

Abstract Painting and Sculpture in America. By Andrew Carnduff Ritchie. Museum of Modern Art (11 West 53rd St., New York, N. Y.) 1951. 10 by 7¾ in. 160 pp., illus. $5.00.

REVIEWED BY VERNON F. STONE*

The principal subject matter of this book consists of many plates illustrating abstract painting and sculpture produced in America since 1912. Of the 160 pages, 40 constitute the text; the remainder contain approximately 210 plates. The plates are presented in two groups: first, the production of the period since 1912 to 1925, second, the work produced from approximately 1930 to the present time. Eight of the plates are in color with color quality accurately reproduced. In addition, 20 plates document the text, which gives a clear, concise analysis of the evolution of abstract painting starting with the French Impressionists, the background going back to 17th Century Holland. The author emphasizes the protestant and revolutionary character of the history, and discusses specific influences such as the invention of the camera, the parallel of music, scientific discoveries and the advent of the machine.

Mr. Ritchie is the Director of the Painting and Sculpture Department of the Museum of Modern Art.

LANDSCAPING

Landscape Architecture. Edited by Lester Collins and Thomas Gillespie, Department of Landscape Architecture, Harvard University (Cambridge, Mass.), 1951. 8⅜ by 11 in. 76 pp., illus. $2.00.

To celebrate its 50th birthday, the Department of Landscape Architecture at Harvard University recently held an exhibition of work done by its students, both past and present. A selection of the material exhibited later was compiled into this interesting small volume showing landscape architecture of all kinds and in all parts of the country. Some of the examples are the work of well-known men or firms — Christopher Tunnard

(Continued on page 258)

* *Department of Architecture, Iowa State College, Ames, Iowa.*

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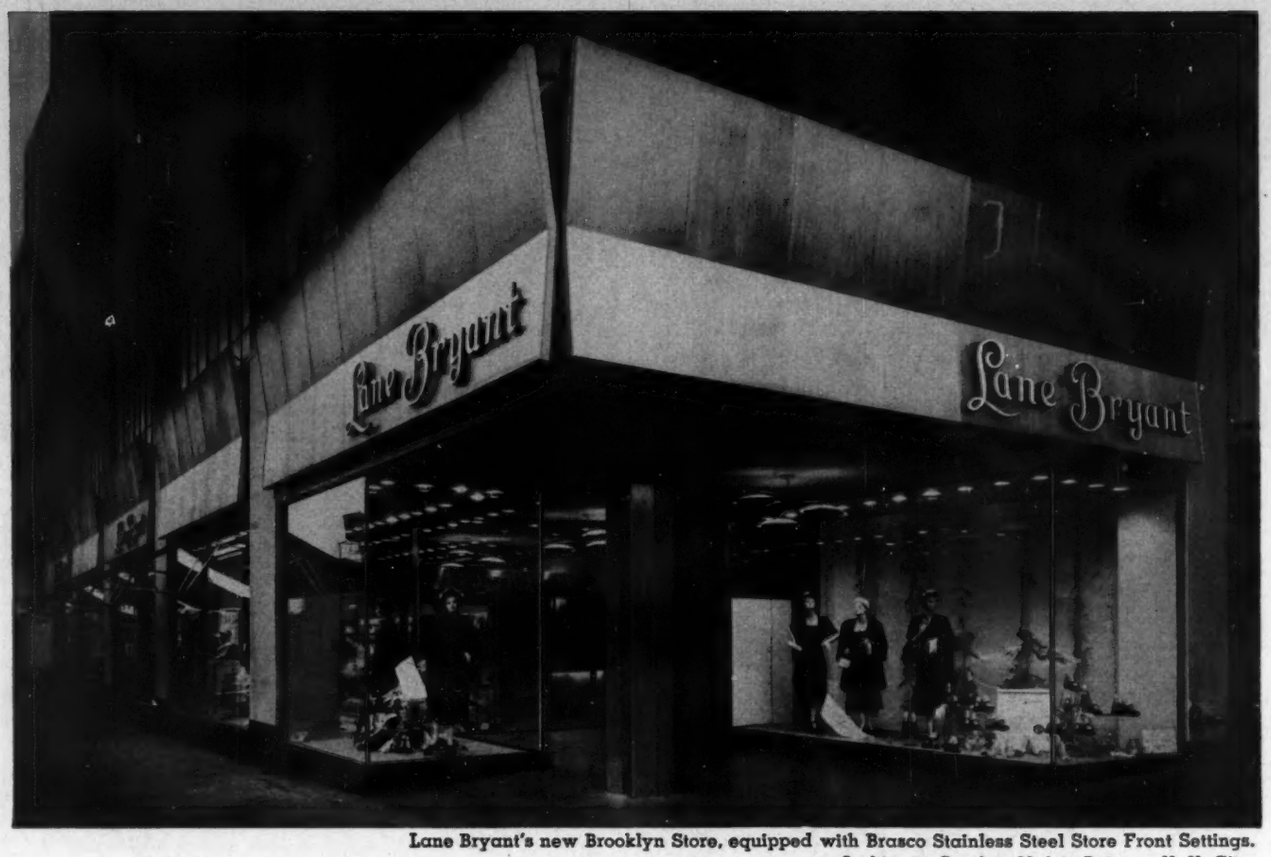
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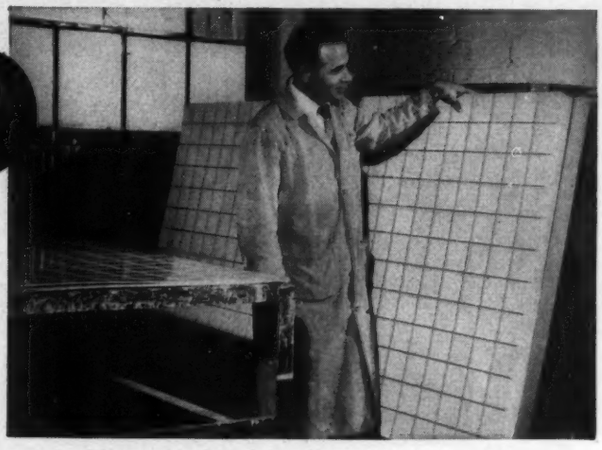
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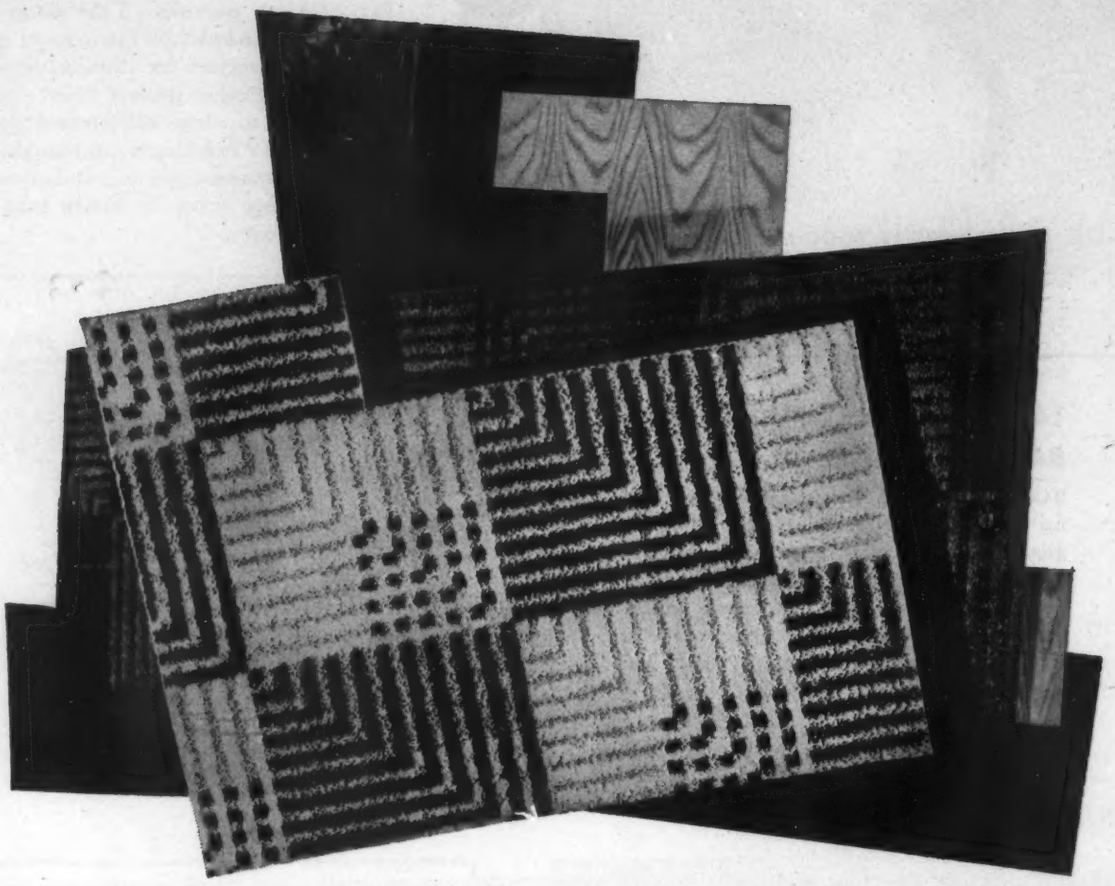
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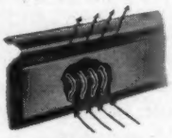
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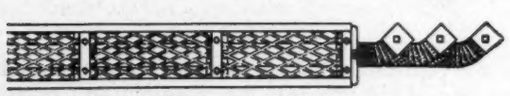
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New Old-Age Home Includes Full Hospital Facilities



Corbin Hardware Selected to Insure Efficient Operation of Varied Types of Doors

Full hospital facilities, located on the upper floors, are available to occupants of the approximately 200 rooms in the new Home for Aged Jews, Chicago. Architects: Loewenberg & Loewenberg; General Contractor: Morris Handler Co., Inc.; Corbin Hardware Supplied By: Howell Hardware Co.

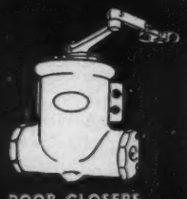
A more convenient building, a more economical building — these are two of the advantages of selecting Corbin Hardware for such carefully planned construction as the new Home for Aged Jews, Chicago.

The entrance doors of this building are equipped with Corbin Automatic Exit Fixtures, providing maximum safety in emergencies. For high security, many of the interior doors are fitted with Corbin "900" Series unit locks. Other interior doors have Corbin cylinder office door locks, dead locks or rim dead locks, master-keyed to their special requirements.

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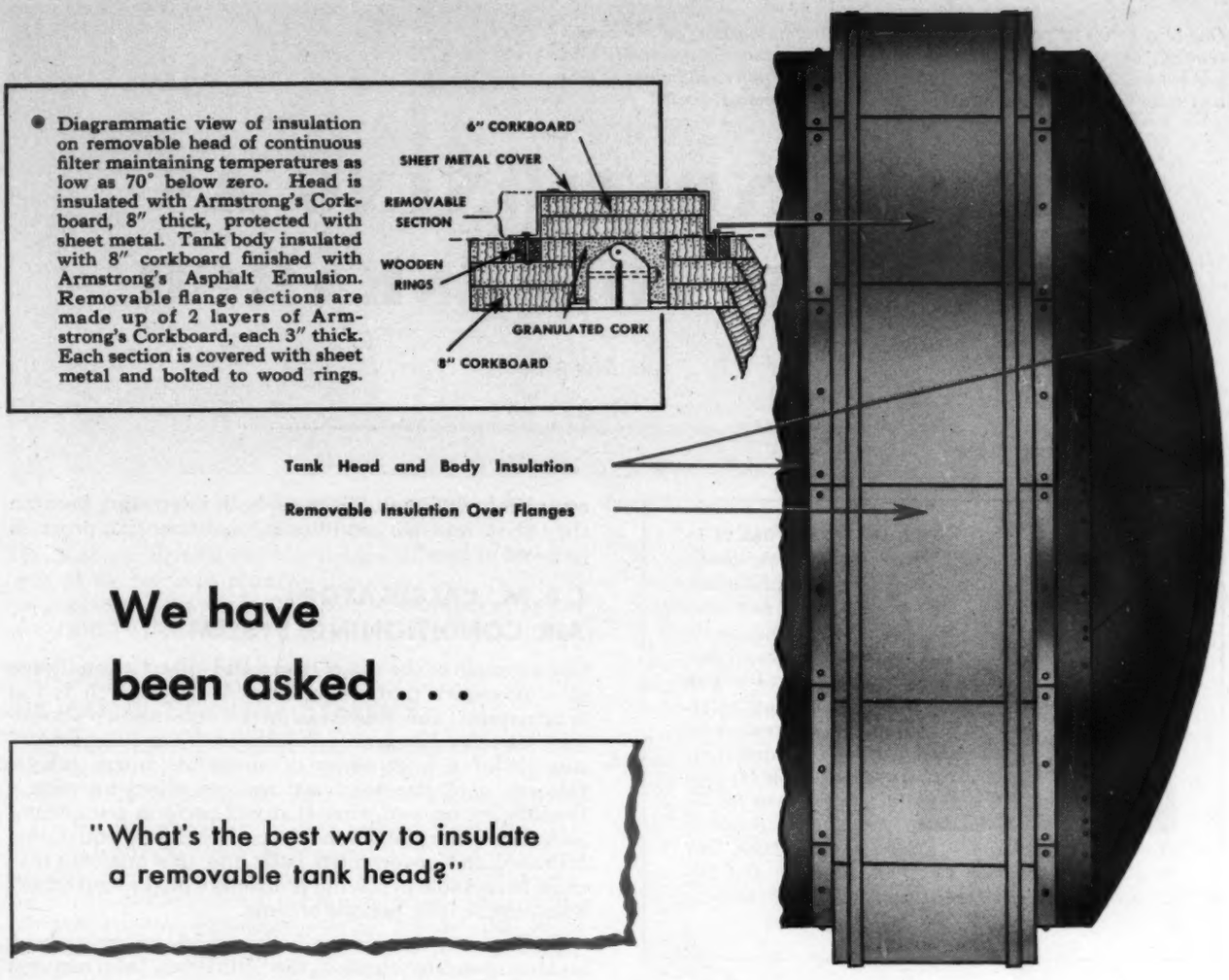
"900" UNIT LOCKS

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● Diagrammatic view of insulation on removable head of continuous filter maintaining temperatures as low as 70° below zero. Head is insulated with Armstrong's Corkboard, 8" thick, protected with sheet metal. Tank body insulated with 8" corkboard finished with Armstrong's Asphalt Emulsion. Removable flange sections are made up of 2 layers of Armstrong's Corkboard, each 3" thick. Each section is covered with sheet metal and bolted to wood rings.

We have been asked . . .

"What's the best way to insulate a removable tank head?"

"I want to insulate the removable head of a low-temperature filter tank," writes a plant engineer. "How can this be done so that the tank head can be taken off during cleaning without damaging the insulation."

To help maintain correct internal temperatures, we advised that Armstrong's Corkboard in the proper thickness be applied to both the tank body and head in hot asphalt or adhesive, and banded in place. To make the insulation removable over the flanges, it should be fastened on mechanically instead of with an adhesive. As illustrated in the drawing above, curved segments of Armstrong's Corkboard are built up and fitted around the flange. Each segment is covered with sheet metal for extra protection and easy removal. When they're bolted and banded on, the segments fit tightly, keeping heat away from the cold flanges and preventing condensation and frost damage.

SEND US YOUR QUESTIONS: If you have any questions involving the use or application of low-temperature or heat insulation, do not hesitate to call on us. We'll see that you get a practical answer. Just address a letter or post card to Armstrong Cork Company, 2407 Concord Street, Lancaster, Pennsylvania.

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FOR ALL TEMPERATURES FROM 300°F. BELOW ZERO TO 2800°F.

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AIR CONDITIONING AS APPLIED TO RESEARCH

by James Mongitore



JAMES MONGITORE *is in complete charge of design of the air conditioning, refrigeration, and mechanical systems for the well-known firm of Sullivan A. S. Patorno, Consulting Engineers. Among the more unusual jobs designed under his direction are the air conditioning systems for the International Business Machines Corporation's Electronic Calculator, and the Bahrein Petroleum Co., Ltd., Research and Development Laboratory in Bahrein Island off the coast of Saudi Arabia.*

Research and development work is now being recognized by the layman as the "exploring arm" of science and industry. A great deal of research and development work must of necessity be conducted under controlled climatic conditions in order to evaluate the results of investigations properly and carefully.

Not many general statements can be made about air conditioning requirements for research facilities, since each installation invariably has very special requirements for temperature, humidity, and fresh air. Common to most of them, however, are huge demands for refrigeration. Also, the air must be filtered to remove dirt that might contaminate critical processes, cause unsightly stains in laboratory rooms, and to remove objectionable odors, fumes and smoke if the air is recirculated.

In laboratories, the decision to include air conditioning is a result of the need for a controlled climate to insure satisfactory performance of experiments, contrasted with other building types where human comfort may be the prime consideration. In some cases, the inside atmosphere must be controlled to protect the safety and health of the personnel conducting the research work.

A controlled climate means that the air conditioning system for a research facility is likely to have more elaborate and more extensive controls and warning mechanisms to prevent damage to equipment and processes and to keep the temperature of this controlled atmosphere within close limits. These general statements are borne out and can be visualized best by two installations described in this article where air conditioning was a necessity, but where the reasons for using it were completely different. They are both interesting because they show how air conditioning and scientific progress go hand in hand.

I. B. M. CALCULATOR AIR CONDITIONING SYSTEM

One example of the use of controlled climatic conditions as a necessary part of pure scientific research is the International Business Machines Corporation's "Selective Sequence Electronic Calculator." The "Big Brain" consists of a huge array of electronic tubes, relays, printers, card punches, card readers, wired up with a bewildering mass of wires that will perform astonishing feats of memory and solve large systems of equations. Industry and government both find this intricate machine invaluable in solving problems which would otherwise require long periods of time.

Similarly to the human body, which generates heat and has means to release it, the "Big Brain" also requires a means (air, cooled by refrigeration) of absorbing the heat it generates. The "Big Brain" consists of 12,500 electronic tubes and 21,400 relays which require 180 kw of electrical energy. The same considerations apply to many electronic instrument installations in research facilities where the equipment is sensitive to changes in temperature and humidity.

Two air conditioning systems were provided, one for the calculating machine proper, and one for the public space. Each system is complete with supply and exhaust fans, filters, direct expansion refrigeration coils, steam heating coils and automatic temperature controls, which will utilize the cooling effect of outdoor air before calling the refrigerating compressor into action.

"FREON"-CHARGED EQUIPMENT

The refrigeration equipment, located in the basement, consists of a 52-ton "Freon"-charged compressor, and an evaporative condenser with air intake and discharge carried up in the rear court of the building.

A NEAR EAST INSTALLATION

Another example of the use of a controlled atmosphere in connection with research is the Bahrein Petroleum Company, Ltd., Research and Development Building on Bahrein Island, located in the Persian Gulf off the coast of Saudi Arabia. Conducting research and development work near the oil wells eliminates the transporting of samples over long distances.

The entire building is completely air conditioned and consists of offices and five separate laboratory rooms.



Interior view of the amazing IBM Selective Sequence Electronic Calculator located in New York City.

The outdoor air temperature designed for is 110°F dry bulb at 40 per cent relative humidity, and the inside temperature is maintained at 85°F dry bulb and 50 per cent relative humidity.

BUILDING UTILIZES SEVEN AIR CONDITIONING SYSTEMS

Seven separate air conditioning systems are provided for the building—one in each of the five laboratory rooms and two for the office spaces in the adjoining wing.

During the so-called "winter" season when the outdoor air temperature drops to about 50°F, warm water is circulated through the piping system and coils. However, the nature of the research being conducted required two refrigerated and ventilated storage rooms—one to be maintained at 0°F and the other at 30°F at all times. The reasons for this were to keep the various petroleum products liquefied and to reduce their evaporation to a minimum. Ventilation was required to protect the personnel entering the rooms from the toxic fumes generated when samples had to be poured from the containers to the vessels to be taken back to the laboratories. The main problem was to prevent the formation of frost which would result if the outdoor air were admitted without proper treatment. This was accomplished by periodically reversing the air flow of the ventilating system through a special assembly of cooling coils which uses the hot outdoor air to defrost the frosted coils of the previous cycle. One "Freon"-charged compressor was provided for each storage room.

The refrigerated rooms are provided with explosion-proof, direct expansion coolers designed to maintain the desired temperatures independent of the ventilation requirements, since ventilation is required only when the personnel are in the rooms. The supply fan is electrically interlocked with a special manually opened supply and exhaust door in each refrigerator.

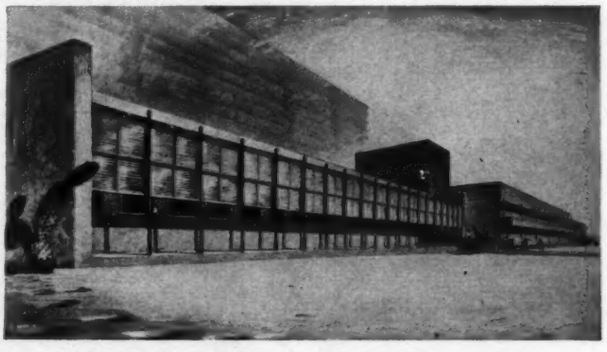
An alarm system is provided, requiring a man to operate a push button before entering the refrigerated rooms and then to come out of the refrigerated room and reset it within 15 minutes. Failure to reset the push button would cause an alarm bell to ring, indicating that the man may have been overcome by the toxic gases.

• • •

Research and development today are carried on to some degree in almost every line of business. Whether or not such operations are conducted on a large scale, they invariably require air conditioning and refrigeration systems, and early consideration is generally devoted to these essentials.

In planning installations for research laboratories and other departments of various business organizations, regardless of proposed size, prominent architects and consulting engineers everywhere are in hearty agreement that the best, most compact, versatile, dependable and economical equipment is that operated with "Freon" refrigerants.

They recognize that these refrigerants are ideal for air conditioning and refrigeration systems of every type.



Architect's rendering of Bahrein Petroleum Company's fully air conditioned research and development laboratory.

"Freon" refrigerants are safe . . . nonflammable, nonexplosive, of low order toxicity and are produced by laboratory-controlled methods of manufacture that assure uniformity of "Freon" and trouble-free operation of the equipment in which these refrigerants are used. You can always recommend "Freon"-charged machines with full confidence that these refrigerants will function perfectly over long periods of time. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

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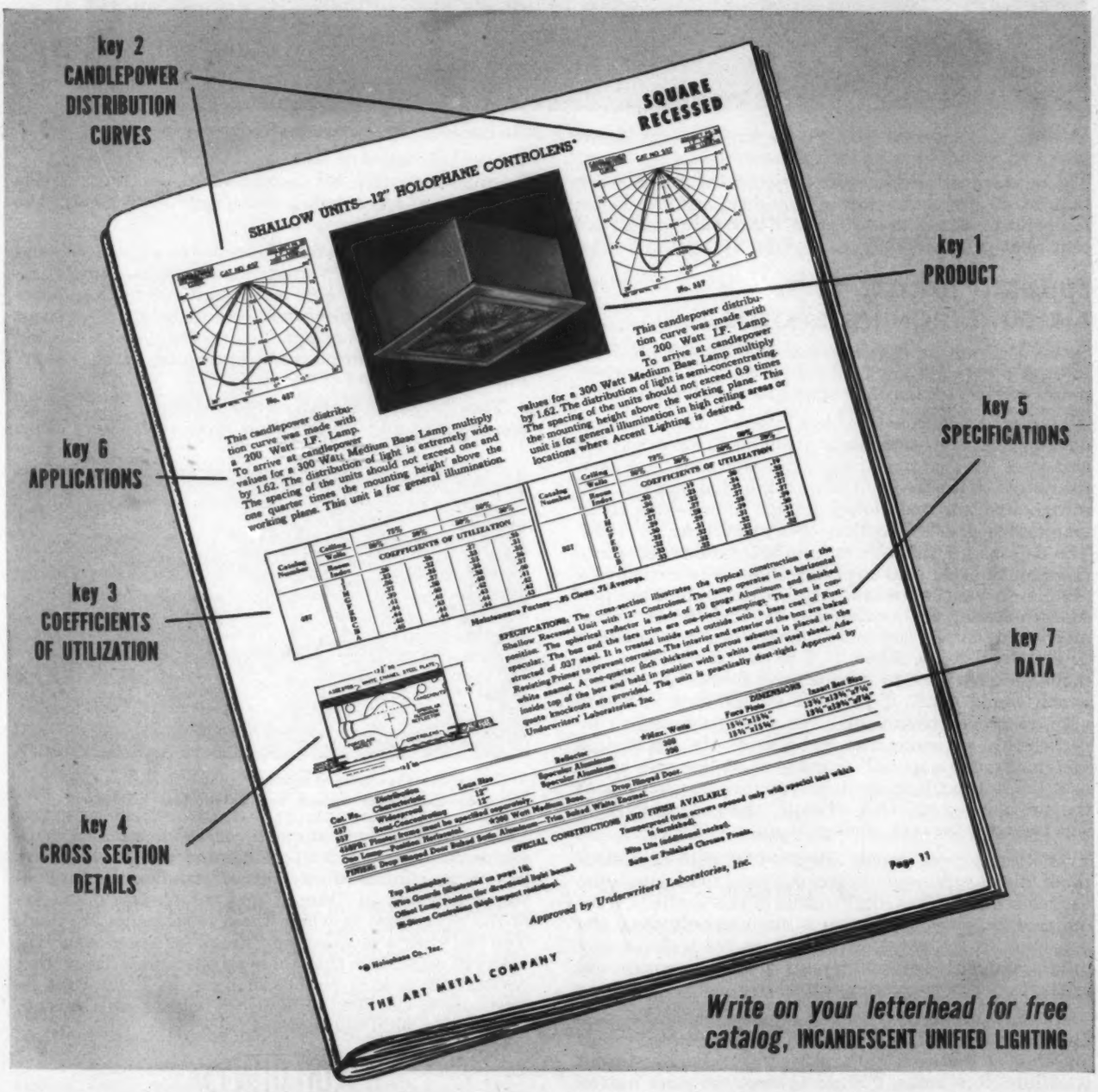
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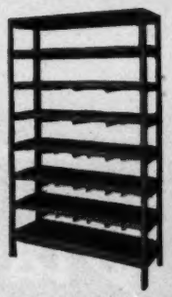




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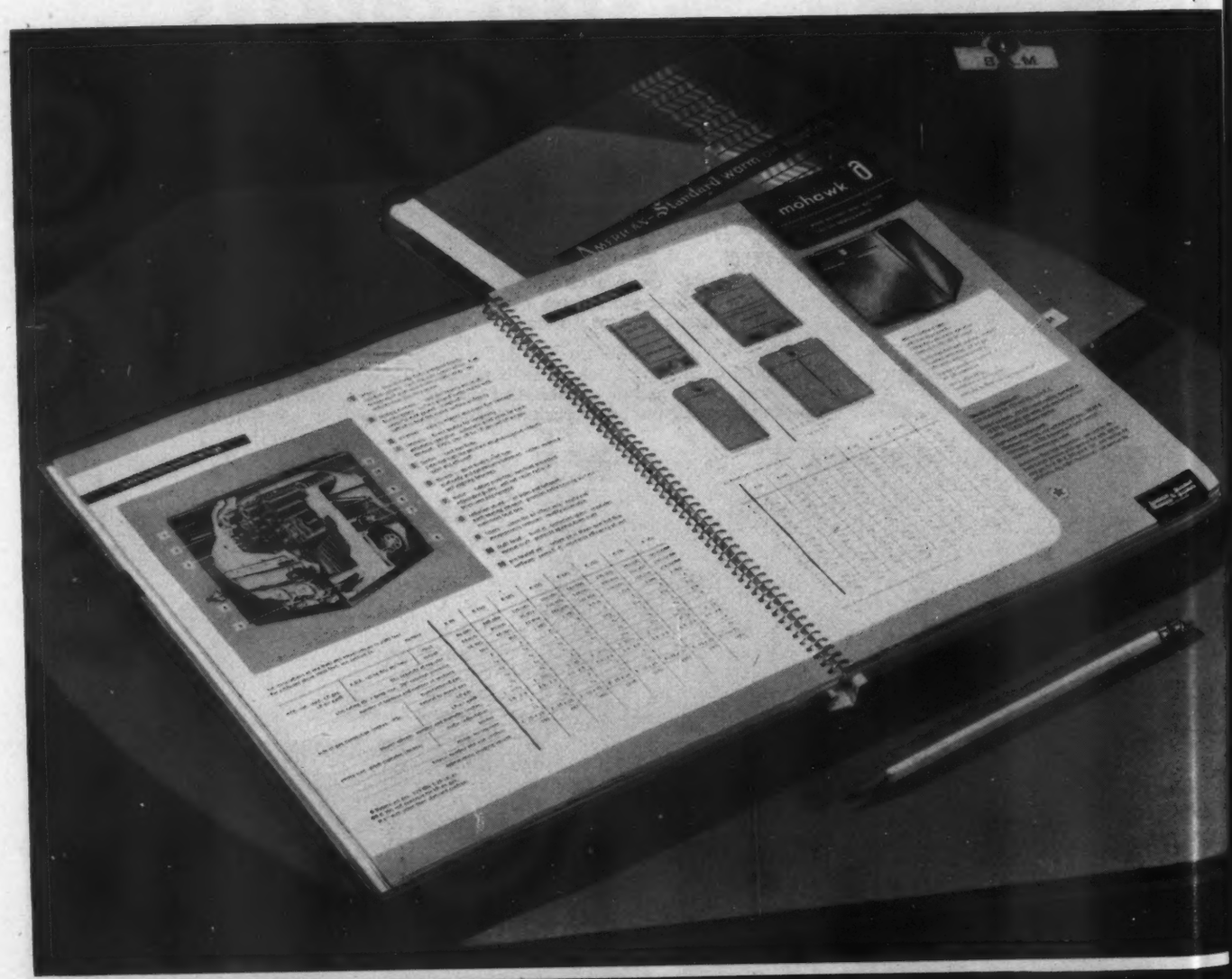


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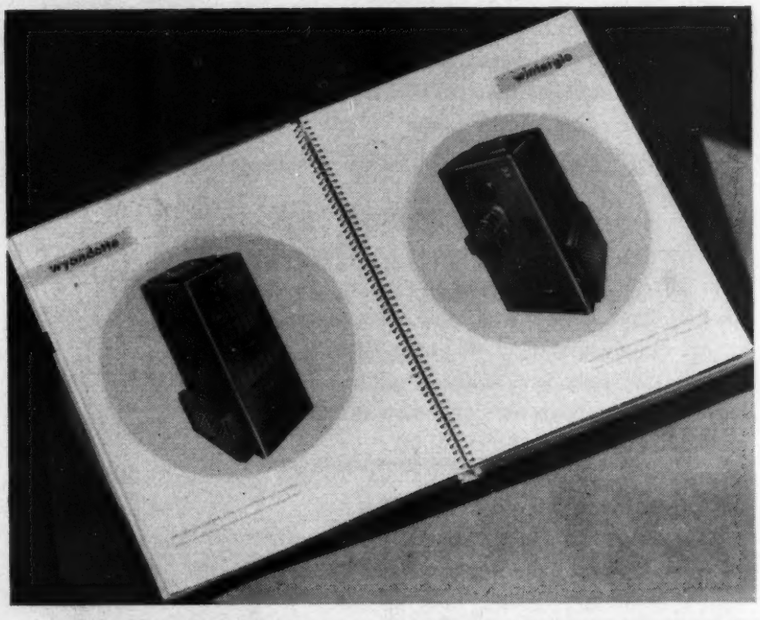
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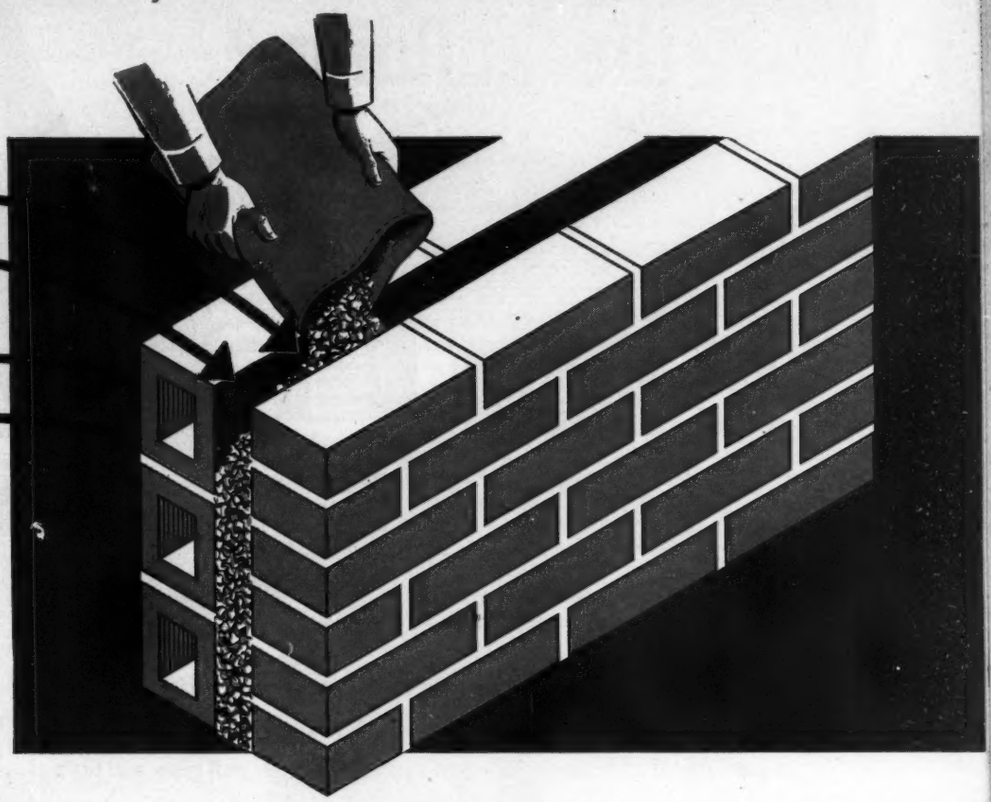
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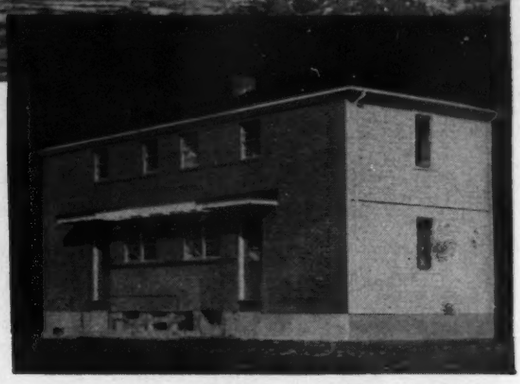
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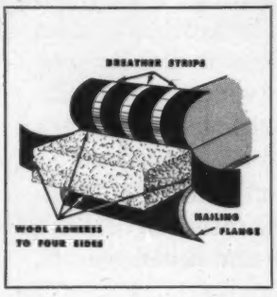
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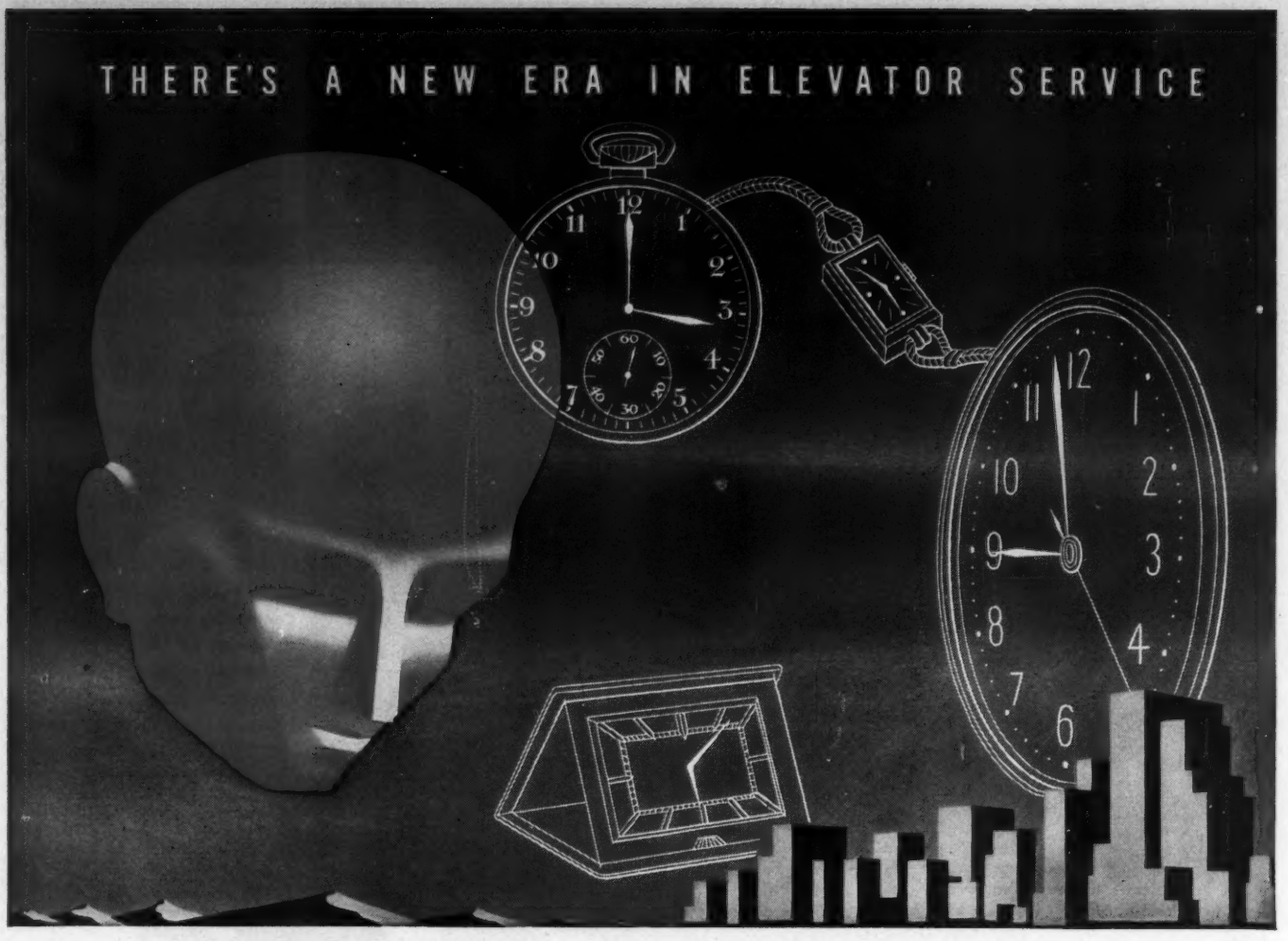
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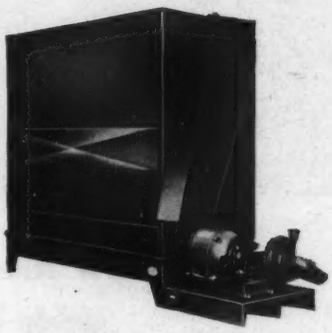
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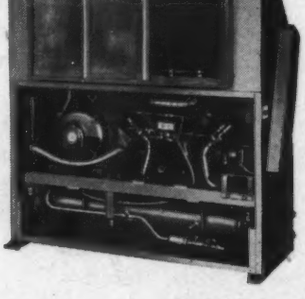
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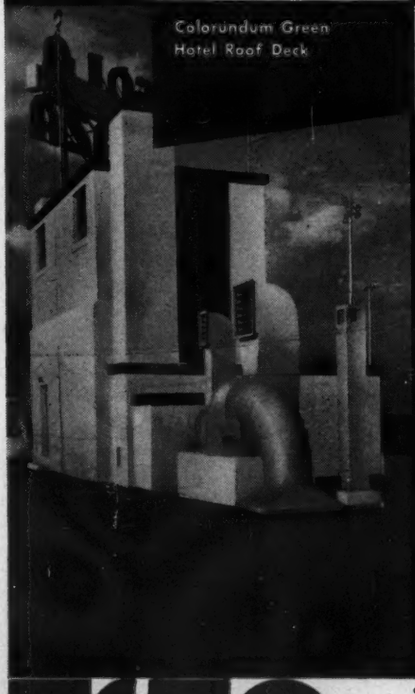
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"What's more, Carrara Glass is precision-manufactured. That is assurance of joints that are true and even. There is no lippage, no warpage. Carrara Glass is easily handled, too. It has charm and refined, subtle elegance. And I've found that it offers unlimited scope for original effects. It is a *permanent* material—impervious to weather and moisture; unaffected by chemicals, grease, pencil marks. Carrara Glass will not check, craze, fade or stain; does not absorb odors. Its ten attractive colors permit a wide variety of combinations."

You, too, will find it advantageous to consider Carrara Glass in all your plans. For complete information, write today to Pittsburgh Plate Glass Company, 2178-1 Grant Building, Pittsburgh 19, Pennsylvania.

Architect: William A. Schultzke, Moline, Ill.

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PITTSBURGH PLATE GLASS COMPANY

engineered to meet defense production needs

for higher lighting levels at lower maintenance and operation costs

One of today's most important defense production lighting problems is not only *how to get* HIGH LIGHTING LEVELS economically, but also, *how to sustain them* economically, year after year. Benjamin's answer is "MAGNA-FLO". This new lighting system, by utilizing the new, high light-output efficiency T12 Slimline Lamps, provides higher light output more efficiently, more ECONOMICALLY, than any other Benjamin-built fluorescent unit.

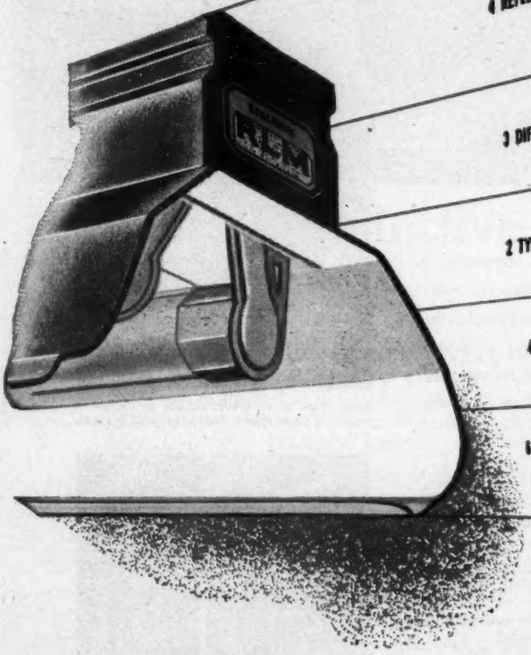
Furthermore, with "Magna-Flo" you are assured that this high light-output efficiency of the T12 lamp is SUSTAINED ECONOMICALLY, year after year. Porcelain Enameled reflecting surfaces sustain this efficiency by maintaining original high reflectivity with occasional soap-and-water cleaning. "Springlox" Lampholders sustain efficiency by facilitating maintenance of the reflector and the lamps themselves. Benjamin "Battleship" construction, utilizing extra-heavy gauge reflector steel, sustains efficiency by preventing sag, distortion and breakage.



FREE "MAGNA-FLO" BULLETIN brings you complete data about this most modern, efficient way to get HIGHER LIGHTING LEVELS at lower cost . . . write for your free copy TODAY! BENJAMIN ELECTRIC MFG. CO., Dept Q-1, Des Plaines, Ill.

BENJAMIN "Magna-Flo"

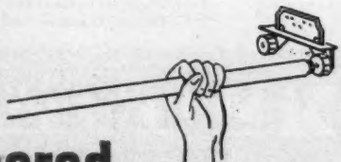
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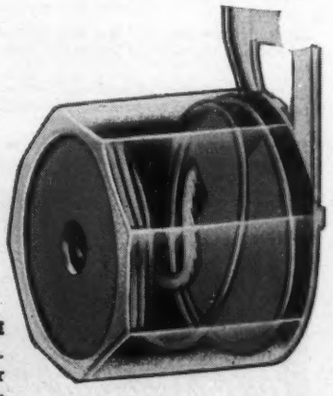


4 REFLECTOR STYLES	OPEN-END	CLOSED-END	OPEN-END WITH APERTURES	CLOSED-END WITH APERTURES		
3 DIFFERENT SIZES	48"	72"	96"			
2 TYPES OF UNITS	INDIVIDUAL	CONTINUOUS LINES				
4 IMPORTANT ACCESSORIES	LOUVERS	PLASTIC COVERS	GLASS COVERS	LONGITUDINAL SHIELDS		
6 TYPES OF SUSPENSIONS (SLIDING OR STATIONARY)	CHAIN	½" CONDUIT	SINGLE-ROD	CEILING	CABLE	TWIN-ROD

engineered TO CAPITALIZE TO THE FULLEST

ON THE NEW, HIGHER-EFFICIENCY, INSTANT-START T12 SLIMLINE LAMPS! "Magna-Flo" Units are available in a wide range of systems for nearly all industrial seeing requirements! Open or closed-end diffuser-type reflectors are available. Apertures in these reflectors direct 5% of light upward for greater seeing comfort.





engineered TO REDUCE MAINTENANCE

AND OPERATING COSTS! *Exclusive "SPRINGLOX" Lampholders*, by simplifying re-lamping, facilitate reflector cleaning and maintenance. They make possible fast, one-hand lamp insertion, and assurance against lamps working loose or dropping out.

B-55628



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Saving Men... Money... Material



THE AUSTIN COMPANY, ENGINEERS & BUILDERS

There's a double job facing building today that has to be done on the double. For the industrial plant of America must expand . . . to build our defenses . . . to provide a healthy economy at home. And yet we must save our vital resources of men, material . . . yes, money, too. And to help you meet this double demand, Ceco offers a double-duty building service . . . two construction methods. Each is versatile enough to meet specialized building needs . . . efficient enough to use a minimum of critical resources . . . two types of joist construction — fire-resistive — each saving three big ways.



Ceco Steel Joists are practical as purlins in roofs of one story factories and plants.

Here's How Ceco Saves Vital Resources

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For Human Occupancy Buildings, light manufacturing plants, many other structures using any framing.

Saves Men because less time and labor are required to provide open wood centering and form work.

Saves Money by saving concrete . . . the "dead load" is kept at a minimum. Also, less lumber is used.

Saves Material because only a minimum of critically short steel is needed. Less concrete, too.

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For Human Occupancy Buildings and roofs of industrial plants using steel or masonry framing.

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Meyer Steelform Construction uses little steel, provides long spans, maximum manufacturing area free of columns.

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...durability. Approximately six inches of tough cork are compressed under heat and pressure. The result is a tough, resilient tile. Many Kencork Floors in daily service for over 35 years look like new... retain all their resilient quiet, warmth and comfort underfoot.

...installability. Kencork is quickly, easily and economically installed over any smooth interior surface that is not exposed to sidewalk grit and grime.

...availability. Over 3,000 Dealers throughout the country assure prompt attention to your needs. Look under FLOORING in your classified phone directory for the Kentile Dealer nearest you.

...low cost. Kencork costs less than most wall-to-wall broadloom carpeting... far easier and more economical to clean... outlasts carpeting by years. And, with the new 3/16" gauge Kencork, this luxury Floor and Wall is within the reach of even the most modest building or remodeling budget.

...service. Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.

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- ☐ 4-page, 4-color folder showing Kencork installations
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The new ACI Building Code, just ratified, permits greatly increased bond stresses and the elimination of hook anchorage, when A305 bars are used. To you, this means lower steel costs and lower placement costs. On your next job, specify A305 bars. Use the new number designations to indicate bar size. A new bar chart, covering these designations, will be sent to you on request.



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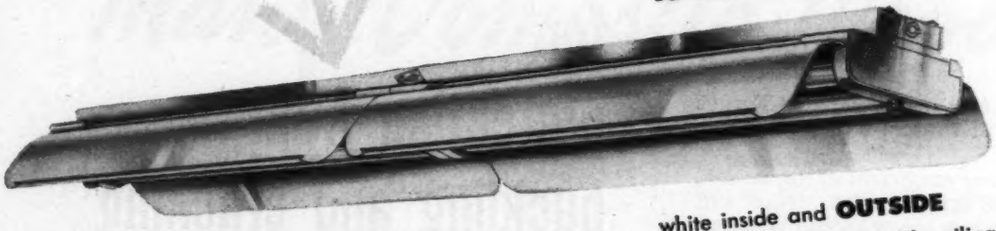
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Polar Bear White
for better sight
and better light

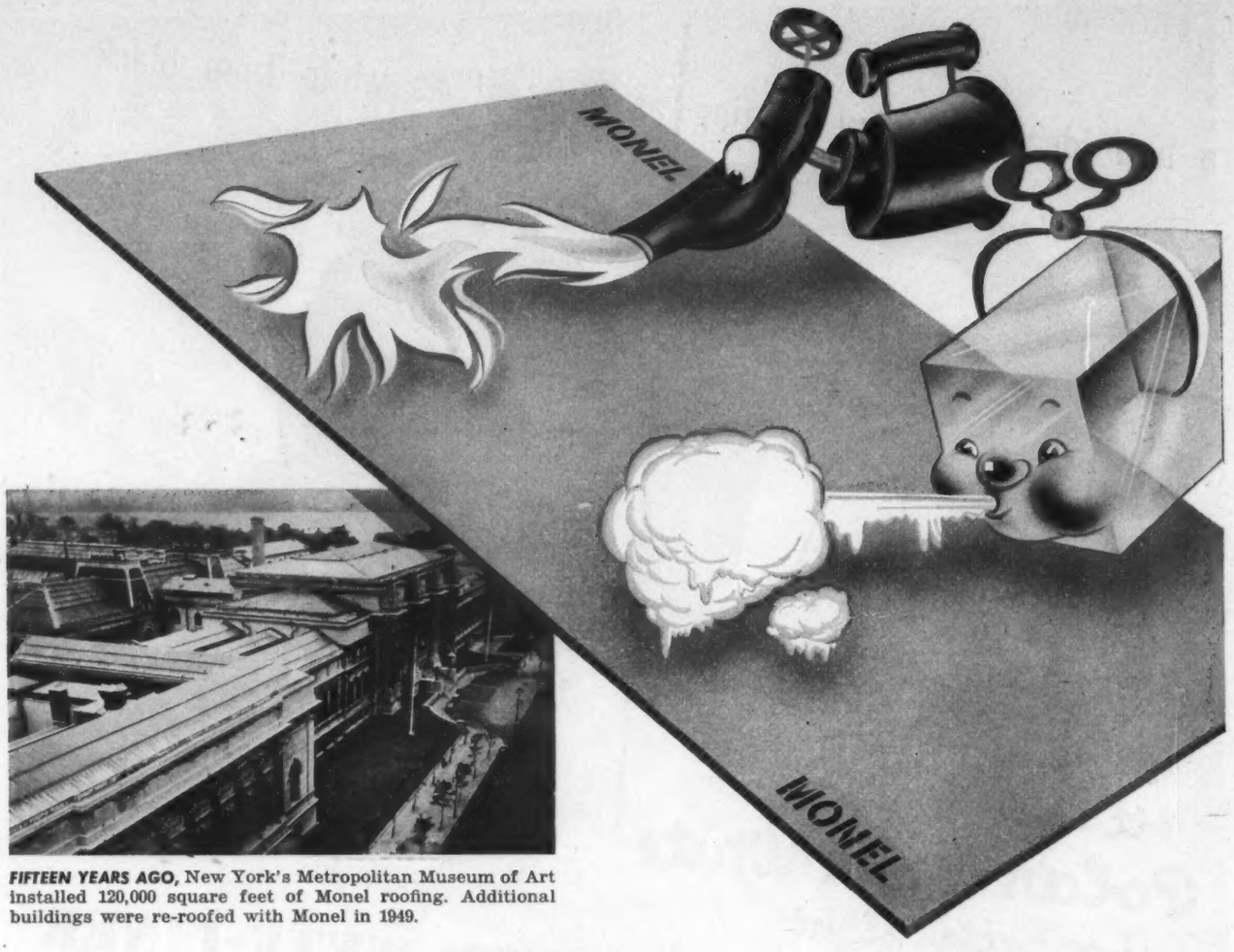
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with AIRFLOW channel



white inside and **OUTSIDE**
the white upside helps lift ceiling gloom
result: reduces strong shadows and harsh contrasts—no more gloomy "black-top" ceiling effects—improved brightness-contrast ratios—easier on the eye
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easy to clean
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Wyte-Liners are made in 2 and 3 conventional 40-watt light units, also for 4- and 8-ft. Slimline lamps

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Never mind the blazing summer sun! Forget the icy breath of winter!

Because of its *low coefficient of expansion,* Monel® stands firm against strain and flexure. There's less creeping and buckling —and no cracking. Monel is long-lasting and trouble-free.

At the moment —because of the demand for nickel and nickel alloys in the defense program—the use of Monel for building applications is prohibited by Government order.

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MONEL ..."*For the Life of the Building*"



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Cost Less Than Many Domestic Woods!

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Johnson & Johnson Engineers, Chicago, designed this office for Bell Savings & Loan Association. THERMOPANE insulating glass was used to prevent excessive heat loss in winter, excessive heat penetration in summer, and to reduce street noise.

How a happy idea works!

Here is an office designed for comfort. The design follows the principle that any one is more comfortable and content in a room which *feels* large and is bright, light and quiet.

Quiet? Yes, even at this busy Chicago street corner, because the Daylight Walls are *Thermopane** insulating glass. Composed of two panes separated by a dry air space, it provides not only heat insulation but sound insulation. Dr. Paul H. Geiger, University of Michigan engineering research physicist, has determined that windows of 1-inch thick *Thermopane* cut out 44% more traffic din than ¼-inch plate glass windows.

The feeling of spaciousness is designed into this office by extending the windows all the way to the ceiling and virtually from wall to wall. That expanse of clear glass lets in the maximum amount of natural daylight. One doesn't feel cooped up in such a "wide-open" room.

Daylight Walls have economic advantages, too. They go up fast and require no interior finishing. No matter what type of building you are considering, ask your architect to compare the cost of walls of glass with walls of other materials.

But quite beyond the considerations of economy, acoustical and thermal insulation, keep in mind always the great psychological advantage of Daylight Walls. People like to see out. They enjoy sunlight and view. Clear flat glass provides this as no other material can.

FOR WINDOW INSULATION, THERMOPANE with ½" of dry air hermetically sealed between two panes has twice the insulating value of single glass. This minimizes chilliness, drafts and heat loss at windows. THERMOPANE cuts air conditioning costs by reducing the amount of heat entering during summer. Write for THERMOPANE literature. Libbey·Owens·Ford Glass Company, 1971 Nicholas Building, Toledo 3, O.

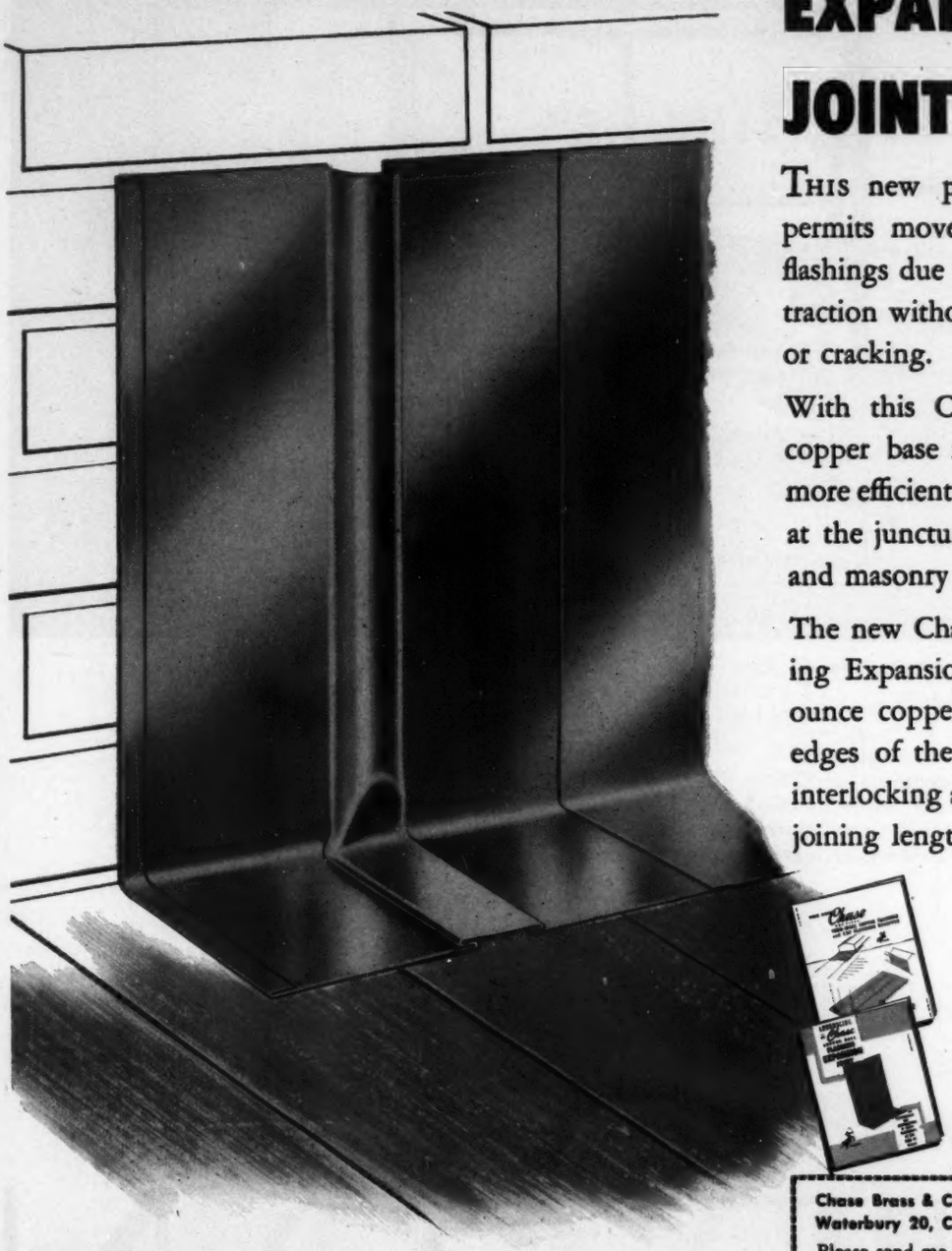


DAYLIGHT WALLS

THAT DON'T OBSCURE VISION

THERMOPANE • PLATE GLASS • WINDOW GLASS

Something new in Copper Base Flashing . . .



CHASE BASE FLASHING EXPANSION JOINT

THIS new patented Copper Joint permits movement of copper base flashings due to expansion and contraction without danger of buckling or cracking.

With this Chase Expansion Joint, copper base flashing becomes even more efficient and economical for use at the juncture of flat built-up roof and masonry wall.

The new Chase Copper Base Flashing Expansion Joint is made of 18 ounce copper. Open seams on the edges of the joint permit fast, easy interlocking and soldering to the adjoining lengths of base flashing.

FREE FOLDERS: *You will also want to know about the new Chase One-piece Thru-Wall Copper Flashing and Cap Flashing Receiver. Write for folders on both these new developments in copper flashing.*

Chase Brass & Copper Co., Dept. AR 751
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☐ *Chase Copper Base Flashing Expansion Joint.*
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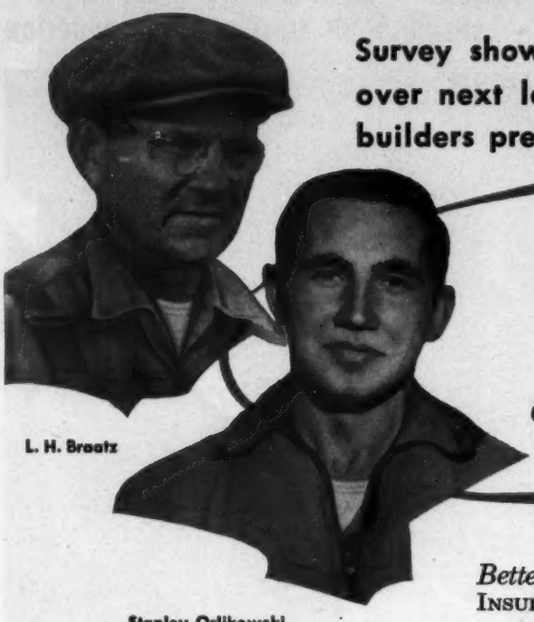
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Survey shows Builders prefer INSULITE 3 to 1 over next leading brand of insulating sheathing. More builders prefer INSULITE than all other brands *combined!*



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"BILDRITE® gives us the best sheathing...and saves us approximately $100 on each job!"

Better performance at a lower applied cost . . . that's the story of INSULITE's leadership in Milwaukee—and *nationwide!*

INSULITE BILDRITE SHEATHING has long been an overwhelming favorite with Milwaukee builders. That's why a recent impartial survey showed Milwaukee builders preferring BILDRITE *3 to 1* over the next leading brand of insulating sheathing.

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Stanley Orlikowski
Quality Builders
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"Bildrite stands up to the weather— with absolutely no warping or buckling"

"We changed to Bildrite from wood sheathing several years ago, and immediately cut our costs by approximately $100 on every house we build. 4-foot Bildrite eliminates corner-bracing and also gives us far more bracing strength than wood sheathing. Our carpenters are sold on Bildrite, too, because it's so clean to handle and so easy to cut and apply."

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More and more architects—*everywhere*—are passing Bildrite's savings and other advantages on to their clients. May we give you complete information?

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MACOMBER NAILABLE STEEL PRODUCTS

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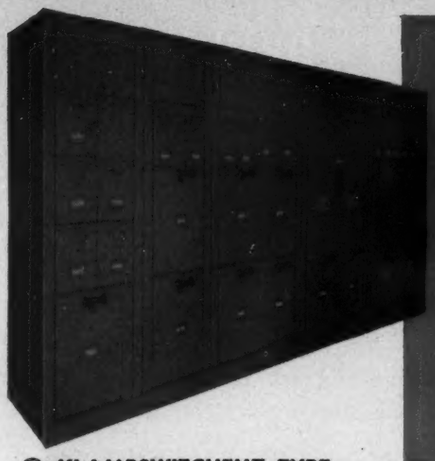
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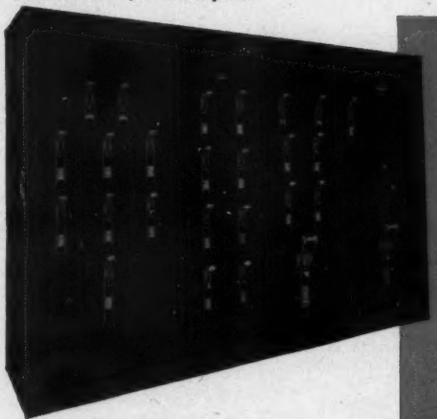
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A safety-type switchboard incorporating the latest features and design . . . an extremely compact unit with almost unlimited electrical capacity . . . greater operating efficiency with less maintenance—safer operations with dead front safety type enclosures and safer, more efficient switching with Ⓕ Klampswitchfuz or Snufarc (hinged, pull-out type) switches. Excellent for disconnect service on lighting and power circuits.

Capacities: **KLAMPSWITCHFUZ 30 to 600 amps. 250 volts AC or DC and Ⓕ SNUFARC: 30 to 200 amps. 600 volts in 2, 3 and 4 poles.**



Ⓕ SHUTLBRAK TYPE

A type similar to the Klampswitchfuz, designed for frequent operation of switches. Totally enclosed, this switchboard features the Ⓕ Shutlbrak switch . . . a front-operated, horsepower-rated industrial switch with quick make and break operations and interlocking fuse doors that permit access to fuse compartment only when switch is "Off."

Capacities: **30 to 1200 amps. 250 volts, AC or DC and 600 volts AC in 2, 3 and 4 poles.**

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When it comes to dependable, economical and efficient light and power distribution, Standardized Ⓕ Switchboards are your answer.

The flexible plan introduced by Ⓕ of assembling complete sections and units into standardized enclosures, not only provides all the advantages of a "Tailor-Made" switchboard, but affords substantial savings in cost.

Standardized Ⓕ Switchboards are factory assembled and shipped ready for connection of main and branch circuit cables. Units can be arranged singly or grouped, because all sections readily fit together. Removable end walls permit the addition of sections to either side. The number and capacity of switches are supplied according to your specifications.

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Ever put a skyscraper on its side?

The Gulf Research and Development Company did. Their big new geophysics laboratory near Pittsburgh is a long, slim two-story building.

But this modern horizontal building is air conditioned by the same Carrier Weathermaster* System used in such famous skyscrapers as the United Nations Secretariat, the Mutual Life Insurance Building, New York City's 100 Park Avenue, and others.

In Gulf's laboratory, though, this Weathermaster System was "put on its side." The small conduit supply ducts that usually rise through floor after floor were installed *horizontally*. 2000 cfm of high-pressure dehumidified air are delivered by a high-efficiency fan operating at 8 inches total static pressure.

Vertical or horizontal, Carrier's Conduit Weathermaster System gives you the same advantages. You're not held down in your design in any way. You can give the occupants cooling or heating as they need it, with fresh new air every time around. You can put temperature controls in each room.

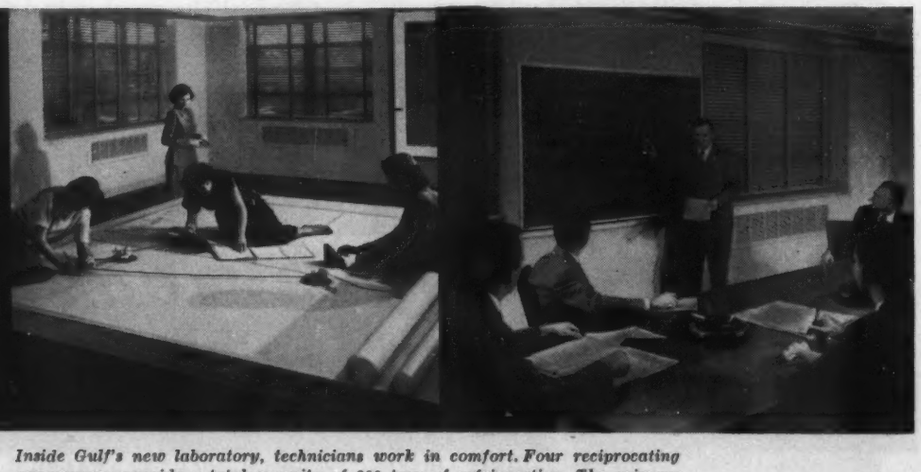
Then, too, standardized prefabricated fittings cut deep into installation costs. And the Conduit Weathermaster System saves from 75 to 85% of rentable space taken up by other systems.

A letter or wire will bring you detailed information. Carrier Corporation, Syracuse 1, New York.

*Reg. U. S. Pat. Off.

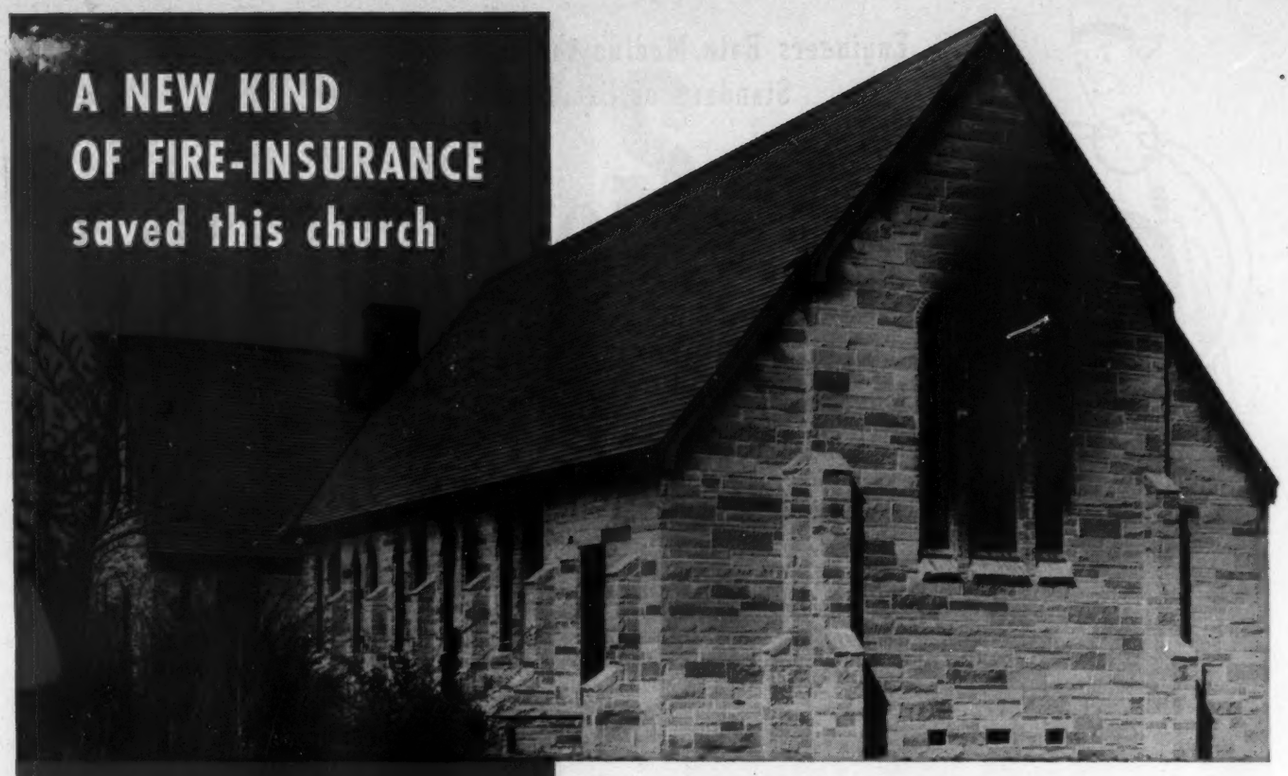
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AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING



Inside Gulf's new laboratory, technicians work in comfort. Four reciprocating compressors provide a total capacity of 200 tons of refrigeration. The primary chilled water system handles 400 gpm. Air conditioning contractor: Dravo Corp.

A NEW KIND OF FIRE-INSURANCE saved this church





CAREY FIRE-CHEX SHINGLES

With interior gutted by fire, this church at Rose Hill, N. C. still stands—a tribute to the amazing fire-resistance of Carey Fire-Chex Shingles!

Despite intense heat and flames which gutted the interior of the Mt. Zion Presbyterian Church at Rose Hill, N. C., the Carey Fire-Chex roof remained virtually intact! Even when a section of the roof collapsed after supporting members burned through, Carey Fire-Chex shingles *prevented spread* of fire to adjacent roof areas and certain destruction of the entire building!

Carey Fire-Chex, made of a new, patented asbestos-plastic, are the first and only shingles ever to win Underwriters' Laboratories, Inc. highest fire-protective rating—CLASS A*. And, in addition to unequalled fire safety, Fire-Chex also offer longer life, greater beauty. Made extra-thick (weight 325# per sq.) for extra wind and weather protection, Fire-Chex feature new shadow-blend beauty—create roof designs copyrighted as works of art.

Give your clients the priceless fire protection, rich beauty and long, maintenance-free performance of Carey Fire-Chex Shingles. See your Carey dealer—or write *now* for illustrated literature!

*Without asbestos underlayment

Rose Hill, N. C. Officials Praise Carey Fire-Chex Shingles!

Excerpts from sworn statements by Chairman of Mt. Zion Building Committee and Rose Hill, N. C. Fire Chief—

"Owing to the fire-resistant quality of the (Carey) shingles, the fire was held in check for three hours. I have no hesitancy in saying quite frankly that all of us attribute the saving of our buildings . . . to your very fine shingle."

W. D. Herring

Chm., Bldg. Comm.
Mt. Zion Presb. Church

"It is a pleasure for me to recommend your shingle, from the standpoint of fire-resistance, without any reservation. The evidence in this particular fire speaks for itself."

H. B. Linnell, Chief

Rose Hill Volunteer F.D.

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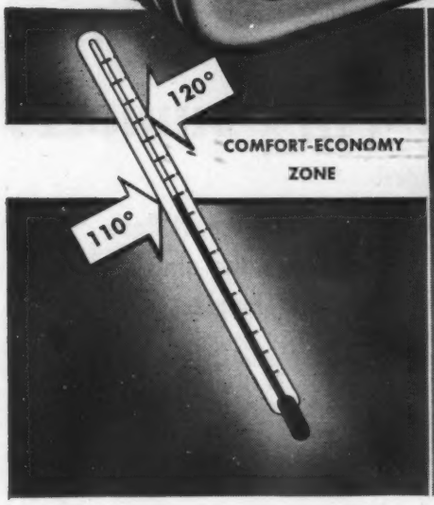
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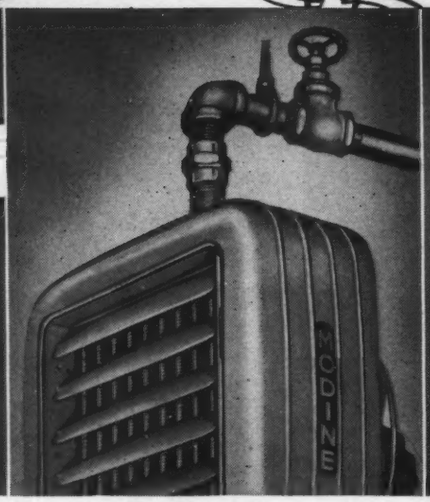
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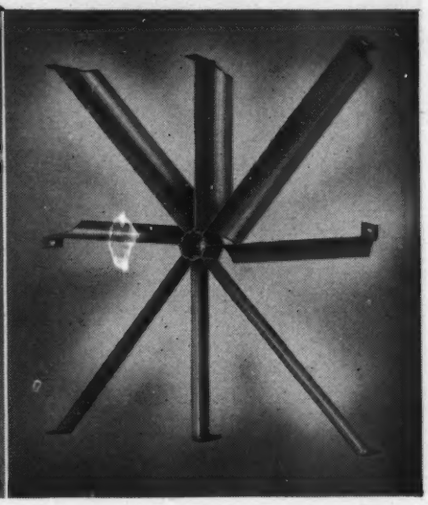
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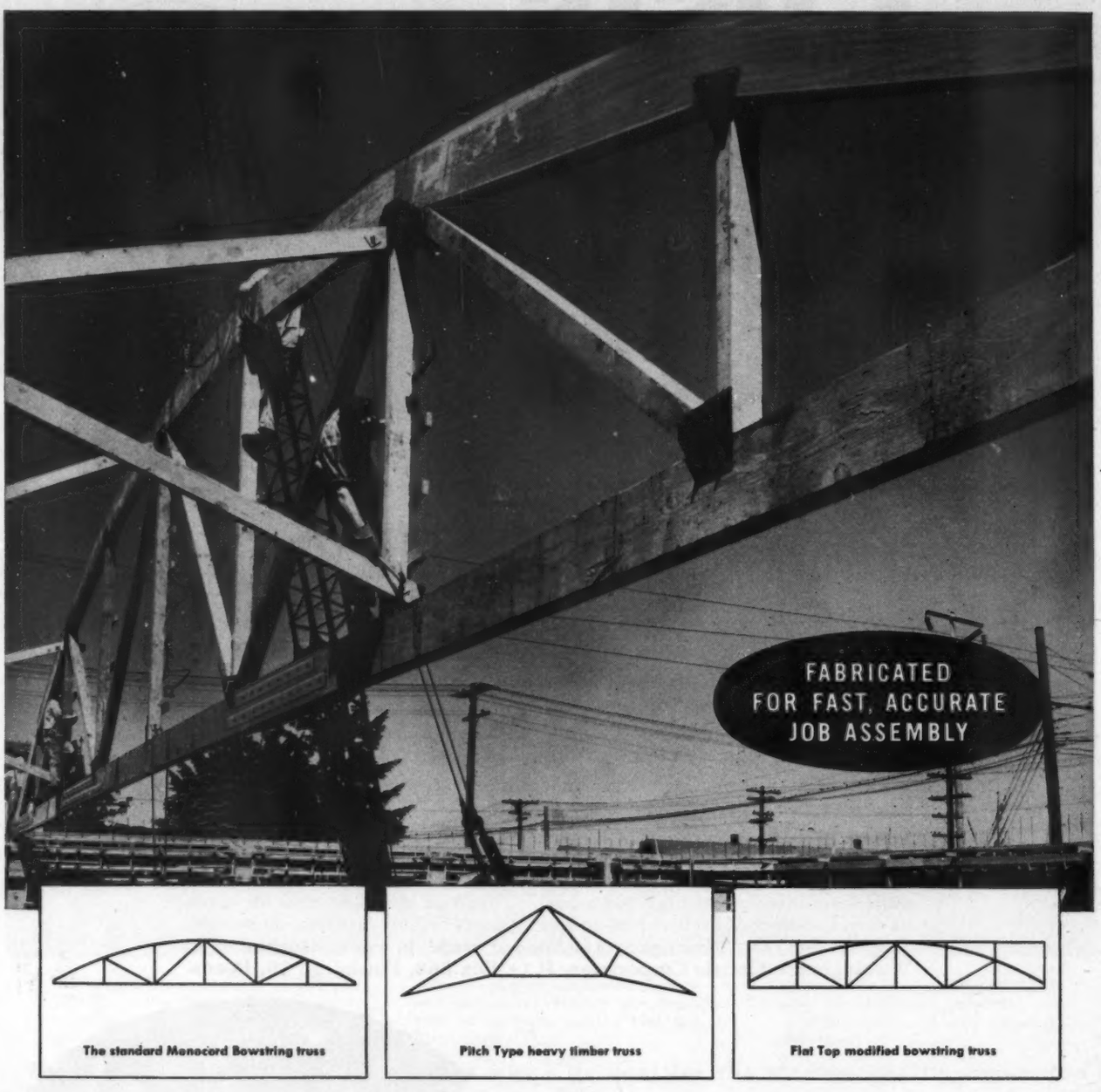
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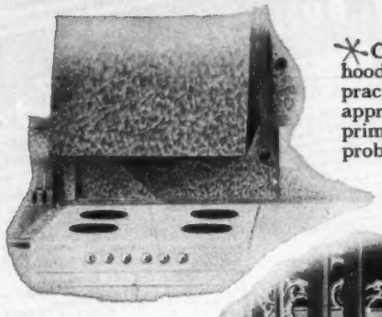
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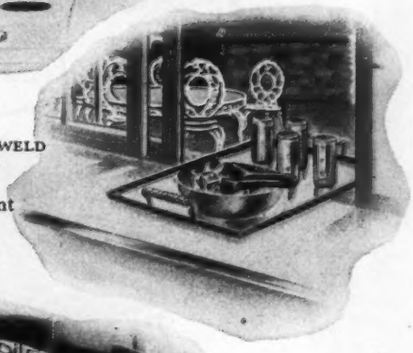
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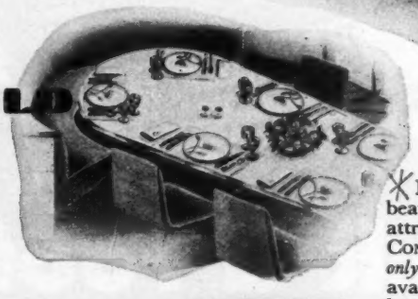
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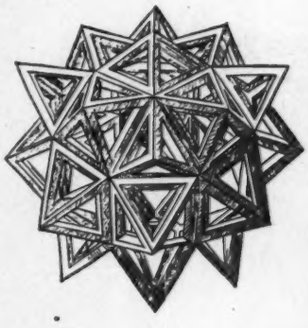
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Science AND Art

IT is remarkable that, seemingly all at once, architectural philosophy is being swept into a newly recognizable stream. It is as if dozens of isolated springs, cut off by some great geological upheaval, were beginning at the same time to flow together, pulled by a gravitational force not forever to be denied.

The force is simply the emotional needs of mankind, and all that is new about those is a fresh recognition of their importance, in architectural and many other fields of interest. Science and invention, moving now so swiftly, had seemed to thrust aside man's emotional characteristics. Now there is realization that humanity and its needs never were to be sidelined, or even strictly disciplined, and architecture is joining other philosophies in looking at the "whole man."

Of course design philosophies do not actually change in sudden swings. RECORD editors have noted revealing signs for some years — in the work of some architects, in the conversations, sometimes wistful, of others. Giedion's book, *Space, Time and Architecture* (1941), noted at some length the neglect of emotional feeling in a century-old concentration on science. As early as six years ago, Dean Hudnut published "The Post-Modern House" (ARCHITECTURAL RECORD, May 1945, pp 70–75), in which he asked quite directly for more attention to the frankly artistic side of architecture. Essentially the same swing toward "emotional content" has lately appeared in critical writings of Belluschi, Mumford, Hitchcock,* Eero Saarinen, Burchard and many others. Just in recent months these writings and conversations have become increasingly purposeful.



Leonardo's Design from *Divina Proportione* of Luca Pacioli

It is not likely that all conflict between thinking and feeling will suddenly be resolved. Experimentation and progress will not cease. Architecture will not forsake science or logic or invention, but neither will it worship them abjectly.

It was given to John Burchard to gain for this new swing of the pendulum its first mark of professional acceptance. At the recent A.I.A. convention in Chicago Burchard, with a scholarly address, "Humanity — Our Client," won plaudits from both sides of that now historical battle between Traditional and Modern. The RECORD presents his paper in full in the next 14 pages.

Risking the over-simplification of the quick quotation, here is Burchard's summary statement: "This is not a time when every sinew in every man should be strained only for the attainment of the practical . . . Artists and architects . . . must not trim their ideals to every blast but must rather incessantly seek in their work the gay, the pleasant, the human, the moving, the beautiful, so that the days we spend in life may be uplifted by our constructions . . ."

---

* *Coming in the August issue of ARCHITECTURAL RECORD*

— Emerson Goble



HUMANITY—
OUR CLIENT

*By John Ely Burchard**

Walk about Zion, and go round about her:
Tell the towers thereof.
Mark ye well her bulwarks, consider her palaces;
That ye may tell it to the generation following.
Psalms XLVIII: 12–13.

IT IS APPROPRIATE that this convention of the Institute, in the first year of the second half of the twentieth century, should be held in this city where, at the beginning of the century, American contemporary architecture was born.

I shall not apologize, even in this year, for speaking extensively about history. History is a field of study which was once too honored in architectural education and is now too neglected.

All of us tend to think in terms of our own pastures and it is all too seldom that we climb to the top of the ridge and look over to the other side. But when we do, certain things become obvious. One of these is that no aspect of man's creative endeavor can stand divorced in spirit or in content from other aspects of that endeavor which are going on at the same time. Although the Greeks produced both an organiser of medicine like Hippocrates and quacks like the Aesculapians, both Plato and Aristotle, it is more significant that they had a taste for pure mathematics but a distaste for applied mathematics; an instinct for descriptive biology but almost none for experimental physics. The same attitudes are revealed really in their art, their architecture, their poetry and their politics. Similarly, there was no such thing as a baroque architecture which could be detached from baroque painting or baroque literature or baroque science or even baroque politics. The same thing is true today.

Of course in different times different aspects of creative effort may be offered different degrees of accolade. A majority of young men of a time may choose the fields where laurels are most frequently won. But there has never been a time when *all* the ablest men have fed in one pasture.

This may well be a time when most men of science are displaying more guts than some men of art. To that extent our current cultural achievements may differ in quality. Too frequently for my taste I hear painters of some repute assert that they have given up our society and hence will simply indulge in self-expression. I notice of such painters that they do not shrink from discussing and defending their works before society. Indeed, their painting has received more lines of explicatory text than has ever been furnished the Venus of Melos, or indeed than she has needed. So this much of weakness there may be. It is hard to imagine Leonardo saying such things; or Picasso, for that matter. Our culture is not in such bad condition as these few discouraged people, who have never done anything themselves to make it better, would seem to be telling us.

Indeed, within the modern school itself there is wide disparity of view; in a single recent symposium on abstract art three American artists ran this gamut. William de Kooning asserted, "That space of science — the space of the physicists — I am truly bored with it by now." To him I would suggest that the converse is even more likely. Robert Motherwell was in the middle when he said, "The emergence of abstract art is one sign that there are still men able to assert feeling in the world. Men who know how to respect and follow their inner feelings, no matter how irrational and absurd they may first appear. From their perspective, it is the

* *Dean of Humanities and Social Studies, Massachusetts Institute of Technology; full text of an address before the recent annual convention of The American Institute of Architects*

. . . around 1905 Bleriot flew the English Channel . . .



1



2

social world that tends to appear irrational and absurd," and again, "One might almost legitimately receive the impression that abstract artists don't like anything but the act of painting."

This is penetrating, if discouraging. Alexander Calder perhaps came nearest to the spirit of artists of other times when he said, "That others grasp at what I have in mind seems unessential, at least as long as they have something else in theirs."[1]

If such views were universally held by the best contemporary artists we would have real occasion for fear. Even as it is, if they were to be frightened by numbers, devotees of the humanities and the arts might now not be encouraged to practise their devotions. If you search a current compendium for significant dates, for example, you will find lists of battles and of births of political men and of scientific discoveries but few if any critical dates for art or architecture. Again, it is a distressing experience to look up the references to architecture in such a noteworthy reference book as The World Almanac. It would have been otherwise had a World Almanac been published in Italy in the fifteenth or sixteenth century and at that time the scientists might have had short shrift. But there were fine scientists in Italy then and there are fine artists and architects in America now.

So, despite changes in emphasis, we must not fall into the trap of assuming that all of the best abilities in any time seek their outlets in one kind of creation. If many do, that may increase the probability of much good work but will hardly cause the result that the work in all fields will not have a comparable tone.

Now despite my strictures on the attitude of some present artists it is true that any man of today who dislikes contemporary painting or fears it, had better start, not by disliking or fearing contemporary painters, but by fearing and disliking contemporary society which is quite another matter. It is too facile a view that most painters (or architects, for that matter) have strayed from the path of general rectitude. If any straying has been done it will turn out to have been rather universal. Therefore the man who hates any manifestation of his culture had best examine all the other manifestations with an equally critical eye. If contemporary art is depressing to him, it is probable that deep in his heart, though he may not know it, he is depressed by contemporary science and philosophy and morals as well. I happen to find all of them uplifting and not depressing, but if I did find them depressing I should not want to try to run away into some dream world I found inscribed in the pages of the past. Rather I should want to try to change matters; and what I should try to change is not the manifestations of the culture as evidenced by its painting or its physics but rather the direction of the culture as manifested by its ethics and its public policy.

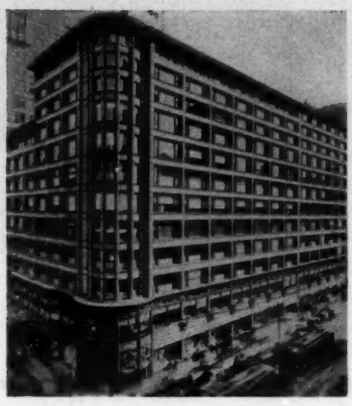
This is, I believe, the true significance in the lessons of history.

Let us now spend a few minutes with recent history. Just because a culture has always a unity, good or bad, it is no accident that around 1905 Bleriot flew the British channel, Einstein developed his equations, *The Education of Henry Adams* was published and the first Duma met in Russia.

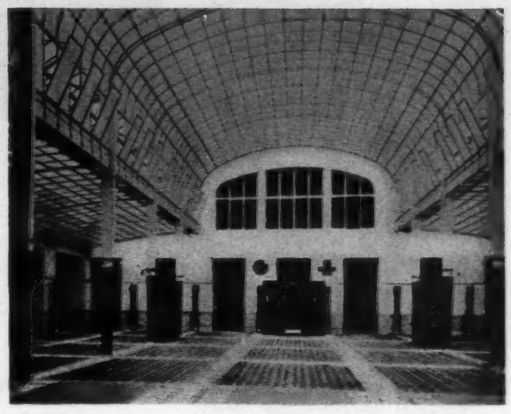
Comparable things were happening in architecture and about these we can profitably be a bit more detailed. Tony Garnier was publishing his *Cité Industrielle*. Louis Sullivan was building the store for Carson, Pirie and Scott in Chicago; Ebenezer Howard was writing about the garden city; Otto Wagner was building the Public Savings Building in Vienna; Auguste Perret was designing Number 25-bis, rue Franklin, in Paris; Robert Maillart was engineering the Queen Alexandria Sanitarium in Davos; Schmidt, Garden and Martin were erecting the Montgomery-Ward warehouse also in Chicago, and Frank Lloyd Wright was building his "prairie houses" in this same area. All of these things were happening in the first decade of the twentieth century and a good many of them were happening in the United States.

[1] *As reported in* What Abstract Art Means to Me, *Museum of Modern Art Bulletin, Vol. XVIII, No. 3, spring 1951 — de Kooning, p. 17; Motherwell, p. 12; Calder, p. 8.*





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4



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Illustrations 2, 3, 4, 5, 6 and 7
from Space, Time and Architecture

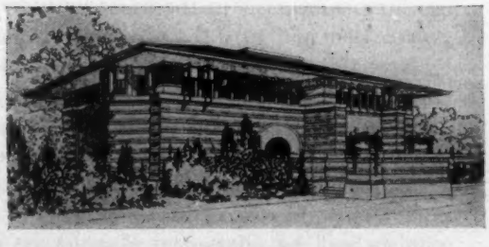


6



7

. . . comparable things were happening in architecture



8

*"Tony Garnier was publishing his 'Cité Industrielle' **2;** Louis Sullivan was building the store for Carson, Pirie and Scott in Chicago **3;** . . . Otto Wagner was building the Public Savings Building in Vienna **4;** Auguste Perret was designing Number 25-bis, rue Franklin, in Paris **5;** Robert Maillart was engineering the Queen Alexandria Sanitarium in Davos **6;** Schmidt, Garden and Martin were erecting the Montgomery-Ward warehouse also in Chicago **7;** and Frank Lloyd Wright was building his 'prairie houses' **8**"*


The New York Times.

"CUBISTS AND FUTURISTS ARE MAKING INSANITY PAY"

Kenyon Cox, Member of the National Academy, and Recognized Here and Abroad as One of America's Foremost Painters, Gives a Straight-from-the-Shoulder Opinion of the New Movements in Art.

New York Times
Museum of Modern Art

9



11



10

Was neo-primitive painting merely a revolt . . .

. . . against this?



12

Space, Time and Architecture

It is also no accident that neo-primitive painting stems from about 1905, nor unusual that, as so often is the case with painting, it anticipated by a few years a philosophy which would later become more widespread. It is possible to interpret this concern with the work of less developed peoples in many ways, and one of the most striking of these ways I shall suggest at the end. But for the moment we might begin with Henry-Russell Hitchcock who in writing about both neo-primitive art and engineering architecture said that both might involve primarily the negative gesture of rejection of mid-nineteenth century standards of art. But, adds Hitchcock, these gestures did begin to clear the ground for more creative developments.[2]

I would myself rate both these movements less negatively. Engineering architecture, though certainly not a desirable end, was not only a negative sweeping away of the eclecticism of the nineteenth century but an earnest and optimistic effort to embrace the onrushing and new technological civilization, which if not embraced would destroy. Neo-primitive art may have been less an effort to part company with a stream of painting which had flowed with some force and with considerable change out of the nineteenth century than an unconscious effort to embrace the other and less well foreseen onrushing force, that of a world culture.

But we are not here today to speculate on this matter. The important thing about this first decade was that something happened. Although nineteenth century artists and critics had constantly been arguing against revivalism and eclecticism and demanding a new style, nothing came of it in the nineteenth century. But between 1900 and 1910 the revolution began.

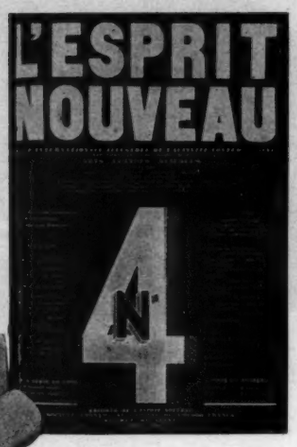
Now about 1910 the United States, which had been in the van of the new architecture, began to stand still. The cubist movement which was strong in western Europe by 1910 did not have a real showing in New York until considerably later and then created a strong and almost hysterical revulsion. Yet it was precisely cubism and the subsequent abstract art which has had a fundamental effect upon architecture, far greater than that of any other painting in history. I am speak-

[2] *Hitchcock, Henry-Russell,* **Painting Toward Architecture,** *New York, Duell, Sloan and Pearce, 1948, p. 14.*



15

Museum of Modern Art



14



13

. . . or were more important things happening?

*"LeCorbusier and Ozenfant began the publication 'L'Esprit Nouveau' **14** . . . Oud built the Cafe de Unie in Rotterdam **16** and . . . Gropius built the Bauhaus in Dessau **15**"*



16

ing here, of course, of a fundamental effect and not of painting as an adornment of buildings.

The whole movement towards change was arrested with the invasion of Belgium in 1914. At the end of World War I the United States sought isolation in many things besides international politics. Not the least of these was art.

So those of us who studied in architectural schools in the immediate post-war period were likely to live in blissful oblivion of what was going on. Even if we went to Paris or Fontainebleau, and most of us did, we were interested in Victor Hugo and not in André Gide, in LeNotre and not in LeCorbusier. We were indeed well shielded even from Frank Lloyd Wright!

The Europeans on the other hand were well aware of him; just as it has remained for a Swiss historian, Sigfried Giedion, to write the decisive studies about American accomplishments in mechanization, so also to our shame all the early worthwhile publications about the great prairie architect were made in Europe and often in Dutch or French or German since the English were also comfortably asleep in their feather beds of indifference.

Nonetheless it was in this time that some more important things happened. LeCorbusier and Ozenfant began the publication of *L'Esprit Nouveau* in 1918 at the very beginning of the peace. Four years later the great Swiss-French painter-architect planner-essayist published his *Ville Radieuse*. In 1925 Oud built the *Café de Unie* in Rotterdam and a year later Gropius built the Bauhaus in Dessau. But it was not until 1929 that the Museum of Modern Art opened its doors in New York and began what would for a time have been a precarious existence had it depended upon the support it got from most of us. I am speaking here with some authority, the authority of Vergil if you like, for with him I can truthfully say, "all of which I saw and part of which I was." It was at this time that I attended what was surely a first-rate American school of architecture and I can assure you that the works of these men were not at that time even a *casus belli*, so well were we insulated. And if any one here doubts this he might think upon the dates at which the American Institute of Architects finally conferred awards upon Louis Sullivan posthumously and much later upon Wright. How silly it all seems now!

Time passes rapidly and it is hard to realize that thirty years have gone by since LeCorbusier coined his much belabored description of the house as a machine to live in. This poetic phrase became in less poetic minds the call to functionalism. Functionalism is something that LeCorbusier and other men of genius talked about more than they practised, but for some time it was a threat to the growth of the new architecture for like engineering architecture it could be treated unimaginatively. It was needed, though, to take us away from the concept of architecture held by such men as Sir John Vanbrugh who built Blenheim and whose work prompted Pope to the savage quatrain:

> .....'Tis very fine
> But where d'ye sleep, or where d'ye dine?
> I find, by all you have been telling,
> That 'tis a house, but not a dwelling.[3]

In my view, if our contemporary architecture turns out in the long run to have been one of the great cultural achievements of man, posterity will then regard engineering architecture as the primitive stage and functional architecture as the transitional stage. For one more ingredient needs to be added. Again as Hitchcock reminds us, technological, that is functional, obsolescence occurs with much greater rapidity than artistic obsolescence or cultural obsolescence which indeed may never occur at all. "The great monuments of ancient architecture . . . have been technically obsolete for centuries and even tens of centuries, but culturally they are less obsolete than a great part of current architectural production."[4] The ingredient as yet only partially supplied is humanism.

All of this development of contemporary architecture as a new expression of the growing spirit of Western man was threatened by the pagan reaction of Nazism and Fascism. This threat it survived. Again it faces the Tartar threat of Russian absolutism, under which no new art can survive — for it is the Western World and not the communist world which has revolutionary character. If one doubts this on the political front he may examine it on the aesthetic front. You remember that these fronts cannot be divorced and that every culture has a unity.

The state of things is realistically stated by Hitchcock when he asserts that though modern architecture of the 20's was peripheral and experimental, today it represents rather the main stream of current production, in the western world at least.[5] It may be news to some of you here that you are practising modern architecture but it is probably more or less true. How well, may be another matter.

Permit me now to return to the cocoon in which we all were sleeping during the Coolidge administration and the Hoover administration. You see the unity of culture demonstrates itself again even in these names.

Bettman Archive



17 [Blenheim House.]

Blenheim, "'tis a house, but not a dwelling"

F. S. Lincoln photo: Courtesy Museum of Modern Art



18

Pagan reaction of Nazism

The 20's were a fervid time in European architecture but a placid time here. The members of this Institute had not yet got around to berating the modern movement and the schools were for the most part blissfully unconscious of it. We designed orangeries for parks and for these the Petit Trianon was the best example; we designed small branch banks, and for these we did not even turn to the far past but to the past as shown by the Riggs Bank in Washington; bigger banks required rusticated stone courses at their bases because these signified the strength, for example, of the Federal Reserve System; we were wisely not allowed to essay Gothic until we came to the more complex problems of a faculty club in a university or a small chapel, but when we did it was the flèche of the Gothic and not the

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[3] Pope, Alexander, The Works of, *John Murray, London, 1882, Vol. IV, p. 451,* "*Upon the Duke of Marlborough's House at Woodstock.*"
[4] *Hitchcock, Henry-Russell, op. cit., pp. 15–16.*
[5] *Ibid., p. 45.*



Bettman Archive

19 *Petit Trianon, model for parks*



21



23



20



Underwood and Underwood

22

reservoir of motifs — icehouse of frozen music

" . . . at Chartres **23,** *everything came as a blinding revelation and one understood all at once why St. Patrick's* **21** *and St. John the Divine* **22** *and many other American Gothic monuments should perhaps never have been built . . ."*

" . . . to study the metopes of the Parthenon **24** *with no understanding of Greek navigation"*



24

structure or the iconography to which our attention was drawn. We studied history to the saturation point but never history as a social document, only history as a reservoir of motifs — an icehouse as it were of frozen music.

It was in times such as these that it was possible to study Gothic architecture without knowing anything about the Mass or the Apocalypse, to investigate the great cathedrals of the Ile de France, charmed by the romantic adjectives of Ralph Adams Cram but with no feeling for the iconography and never hearing of Emil Male; so that when finally one stood at Moissac or Souillac or Autun or even at Chartres everything came as a blinding revelation and one understood all at once why St. Patrick's and St. John the Divine and many other American Gothic monuments should perhaps never have been built. It was the time when it was possible to examine the fora of Rome without ever hearing of the tenements of Crassus, or to study the metopes of the Parthenon with no understanding of Greek navigation, or the funeral oration of Pericles or the profound political significance of the Athenian state. But you may be very sure that we knew the relation between the diameter and the height of the column of each Greek order. This was a scandalous time and there is no doubt about it.

It is exceeded in scandal only by the time which, having seen through the evils of architectural history of the early twenties, now elects to abandon history altogether. In the days when many of us here were

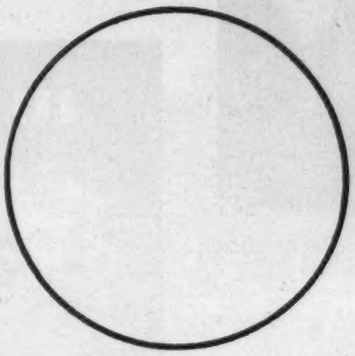


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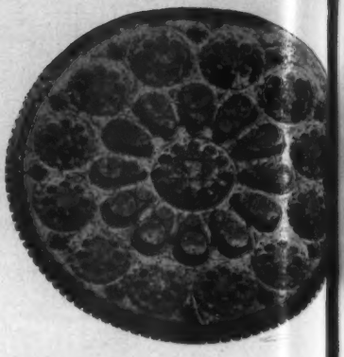
*"Picasso, when he made the illustrations for 'Lysistrata' **25,** was not unaware of fifth century painting" **26***



26



27



28

"Euclid has fully explained all the qualities of the circle; but has not in any proposition said a word of its beauty. . . . The beauty is not a quality of the circle. . . . It is only the effect which that figure produces"

studying, it was true that we were looking at architecture as the time and not as the mirror of the time; and even worse at the architectural monuments as things to emulate and not as representative of how people possibly no abler than we had sought to solve the problems of their time — problems which for us were never stated. This was very bad. But one could escape it. It was not so bad as the fear of history which seems now to pervade architectural education. And the most extraordinary thing about all this is that the leaders of the new movement were thoroughly grounded in history.

LeCorbusier never leaped to the shore of a Greek island from a small boat but his heart leaped, too. Picasso, when he made the illustrations for Lysistrata, was not unaware of the fifth century painting of lekythoi. Every one of the great revolutionaries knew exactly what he was revolting from. There is danger if one does not know.

Do not let my enthusiasm for history carry us to false comparisons here. I believe that both sides to the earlier conflict should realize that the victory has been won, who has won it and that the time has come to engage in the less exciting task of consolidating the gains. In this I do not withdraw one bit from the thesis that the revolutionaries of the first quarter of the century were right but I think it is time that they understand that they have won, dull as the resulting future may then seem.

We must be very sure to understand what is meant by that last statement. It does not imply that they must now kiss and make up, and that everybody has suddenly become a good boy. It does not mean that they are to condone or pretend to like relics of an architecture which they have overthrown but which still has remnants. It does not mean that they should accept as valid ill-conceived examples of the style they created, done by people who approach this architecture with the same mercantile spirit with which they formerly approached the Gothic or the Renaissance, who, to paraphrase one of them, find it possible to design in any style. It also does not mean that there may not be another revolution. In painting this process seems to be continuous. I have not been able myself to detect a new architecture of the past few years, but this may simply indicate a personal myopia. For we can be all too certain from the evidence of history that those very people who have proclaimed loudly the new dawn in the 20's could easily be the first to deny another dawn in the 50's. But all this does not alter the fact that it would be well if the one-time revolutionaries might now, not relax, but move on to the next stage, that of consolidation. I realize how easy it is for one who never felt the wounds of a struggle to make light of the scars. But still the time has come for another look — a time to re-examine the study of history in architectural education for example.

There are many roads which purport to lead to Rome but not all do. The road our generation followed, over the beaten track of European architectural history, was not a right road. But it was no more wrong than the refusal to examine the social meaning of European architectural history, and the boy who wanders Finland and Sweden to the exclusion of Provence and Tuscany and even the Loire is on just as egregiously wrong a track as the youth who spent his years on the Rive Gauche with the distinguished firm of Courvoisier, Hennessy and Martel.

The reaction against history has never been tolerated by such minds as that of a Giedion. But it has pervaded the schools and this has been disastrous, for taken the right way there is everything to learn from it. Let me not take too much of your time in reminding you what can be learned. But there are many things.

There is, for example, humility. It was Job who remarked with bitter irony, "No doubt but ye are the people, and wisdom shall die with you," [6] and Horace

[6] *Job XII: 2.*

who said much the same thing, "*Vixere fortes ante Agamemnona multi*," — "Many brave men lived before Agamemnon." [7]

There is, for example, the significance of beauty as posed by Hume, a sermon for the functionalists:

> Euclid has fully explained all the qualities of the circle; but has not in any proposition said a word of its beauty. The reason is evident. The beauty is not a quality of the circle. It lies not in any part of the line, whose parts are equally distant from a common centre. It is only the effect which that figure produces upon the mind, whose peculiar fabric of structure renders it susceptible of such sentiments. In vain would you look for it in the circle, or seek it, either by your senses or by mathematical reasoning, in all the properties of that figure.[8]

There is, for example, explanation of the significance of architecture. Wrong as he was in so many particulars, Ruskin was not far from the mark when he said:

> Architecture is the art which so disposes and adorns the edifices raised by man for whatsoever uses, that the *sight* of them contributes to his mental health, power and pleasure.[9]

There is, for example, evidence as to the requirements for being an architect. Again as Ruskin said in his notes on his Edinburgh lectures:

> A great architect must be a great sculptor or painter. This is a universal law. No person who is not a great sculptor or painter can be an architect. If he is not a sculptor or painter, he can only be a builder.[10]

There is no disgrace in being a builder. But serious consideration of this truth might give many a young man pause. Or in similar terms from Hegel,

> We assert then that nothing has been accomplished without interest on the part of the actors; and — if interest be called passion, inasmuch as the whole individuality, to the neglect of all other actual or possible interests and claims, is devoted to an object with every fibre of volition, concentrating all its desires and powers upon it — we may affirm absolutely that *nothing great in the World* has been accomplished without *passion*.[11]

This might in turn warn the passionless to go by on the other side.

Again, and in my view of supreme importance, we may learn that we must try to see works of the past as their contemporaries saw them, realizing all the time that we shall not actually achieve this. But achievement of the realization would be a better warning against copying than shutting our eyes to history. André Malraux, for example, has pointed out how impossible it was for the people of the Middle Ages to accept earlier classical manifestations of art so long as the meaning of their own art was greater than art itself. That is to say, if one begins by seeing in a statue of the Virgin not a statue, but the Mother of Jesus, then one cannot bring into his shrines or perhaps even into his secular life statues of other gods or demi-gods whom he must regard primarily not as statues but as idols. On the other hand once art as art becomes more meaningful than art as symbol or reality, this is possible. Thus when the heathen god becomes only a statue it is then safe from iconoclasts.

Malraux also finds one other point in history which would be important to us. After remarking that the past of art had another enemy besides the tendency to interpret it as real, he says that this second enmity was a highly cultured one and continued even after art as art was accepted in the Middle Ages. This was the notion that their own contemporary art had an absolute superiority over the art of previous times.[12]

Finally, and most relevant to our problem, there is another lesson in history. This lesson has been stated so often that it may seem banal but it needs constant reiteration. It is that art, and thereby culture, has never yet managed to reach a high point in the absence of some absolute prestige. This prestige has most often been conferred upon religion but occasionally upon a social movement such as Revolution or a social organism such as the Nation. More recently there has been an attempt, largely abortive up to now, to confer a similar prestige upon Science. The nineteenth century tried in turn to convey that prestige from which Religion had been shorn, first on the Revolution, then on the Nation, and then on Science. The current largest attempt is of course to convey it upon Marxist doctrine. But despite the optimism of the nineteenth century it failed in much of this to find highest forms giving spiritual value to an absolute prestige which it had failed to establish. The result of this could be felt even upon the art of religion whose prestige was waning.

As Malraux says:

> . . . There where once soared a cathedral, men fall to feebly building a pseudo-romanesque or pseudo-gothic church; or else the modern church, in which Christ is not. Remained the Mass said on the mountain-top, to whose perils and equivocations the Church soon became alive; in our time the only setting worthy of itself that the Mass found was within the barbed wire of the camps.
>
> On the whole face of the globe the civilization that has conquered it has failed to build a temple or a tomb.[13]

There have been agnostics in every culture, but no agnostic cultures until now. Even when great leaders of a time themselves were agnostic, they have not felt it prudent or wise or perhaps even comfortable to evade the responsibilities of the believer. Though Cesare Borgia may have blasphemed in his cups, he nonetheless continued to build St. Peter's. Thus living religions have, regardless of their absolute values, managed to afford a transcendent communion linking every man of

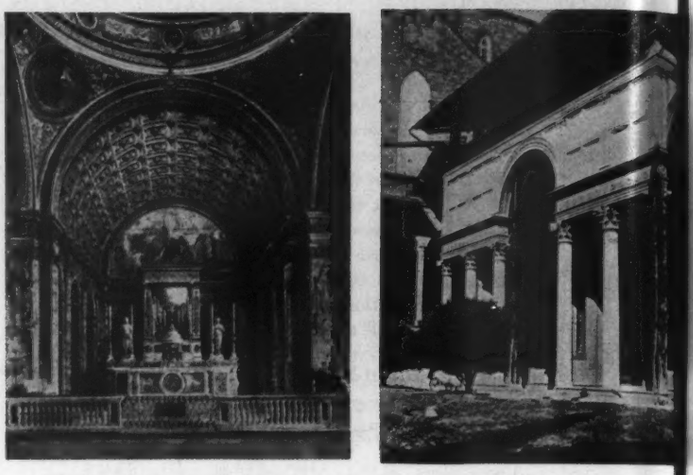
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[7] *Odes, Book IV, No. IX, line 25.*
[8] *Hume, David,* Enquiries Concerning the Human Understanding and Concerning the Principles of Morals, *Appendix I, "Concerning Moral Sentiment." Reprinted from the posthumous edition of 1777 and edited with introduction . . . by L. A. Selby-Bigge, Oxford University Press, 2d edition of 1902, impression of 1936, pp. 291-2.*
[9] *Ruskin, John,* Seven Lamps of Architecture, *undated edition published in New York by Thomas Y. Crowell and Company, p. 15.*
[10] *Ruskin, John, op. cit., Addenda to Lectures I and II, p. 273.*
[11] *Hegel, G. W. F.,* Lectures on the Philosophy of History, *trans. from 3d German edition by J. Sibree, George Bell and Sons, London, 1884, Introduction, p. 24.*
[12] *Malraux, André,* The Twilight of the Absolute, *(Vol. III of "The Psychology of Art"), trans. by Stuart Gilbert, Pantheon Books, New York, 1950, (Number XXIV in The Bollingen Series), p. 19.*
[13] *Ibid., p. 54. The next few paragraphs are based on same thought.*

the culture to the fellowmen of his culture and have created in this sense a sort of anonymity in which the individual was of minor consequence.

The machine is creating a comparable anonymity today but instead of welcoming it as past cultures would have done, we spend a great deal of our time worrying about the destination of the individual. Now this concern with the individual is not something that is very old in history. Even the French Revolution did not actually set it up as the antithesis of the church, it set up rather the nation.

Now the doctrine of individualism needs constant examination. Cultures which have attempted to base themselves on man, the individual, have seldom lasted long. An individual looking at himself may soon find that he does not amount to a great deal, but as he becomes more familiar with greater men and breaks their bread, for example, he may discover that they are not supermen and that each one of them has "a large slice of common humanity."



Could Bramante be accredited? . . . Or Brunelleschi?

SO MUCH, then for history. Now what else may we say about humanity, our client?

Let me begin by flattering you by saying that we ask too much of an architect these days. We ask him to be a business man. We ask him to be a professional man. We ask him to be an artist. I have listed these in ascending order of importance. Let me now affront you by saying that these three requirements are incompatible. You may be wholly one or the other, and be honorable. If you seek to be all three you will almost surely fail to be any.

Does not this in itself suggest some things about the education of the architect? Does it not whisper any warnings against accrediting? Or even registration unless one is very careful indeed? Could Brunelleschi be registered today? Or Bramante? But the problems of education will be dealt with in subsequent sessions. Having fenced long enough, let me dispose of my topic in short order.

Let us talk for a moment about humanity, our client, under three headings. The first is in terms of an immediate practical problem; the second is more philosophical and again returns to one of the problems of education; the last is perhaps mystic.

TO INTRODUCE the practical subject, let me re-tell the story once told by C. E. Montague of the Glasgow man who, having died, met a friend who had predeceased him. Said the newcomer, "Heaven seems vara little improvement on Glesga." But he was brought up short by the other's reply, "Mon, this is nae Heaven."[14]

This may suggest to you what I have in mind. It is the cities which matter now more than the individual buildings. The whole *is* greater than its parts. But by a strange twist we cannot ignore the individual buildings either. The most case-hardened of us would no longer agree with Ruskin that railroad stations, for example, should not be the beneficiaries of architecture. Everything must be, individually, collectively. But for the most part we pass by in blinders. This was the meaning of my first quotation from the Psalmist, the passage about the City of Zion. The architects of Boston, no doubt, and regardless of their attitudes about art, agree that buildings and the sum of buildings, that is, cities, should have the classic attributes of firmness, commodity and delight. Firmness is taken care of by engineers and building codes; good architects manage some commodity for their individual plans; but delight slips in seldom. Worst of all, it is the delight of the city as a whole which is allowed to go to waste and without useful protest. Many of my friends no doubt come to Boston every day over the Concord turnpike. What has been done, partly by architects, to the junction of their highway with the streets of the City of Cambridge probably causes them pain. There is little evidence that they have wasted much personal time about it except in cafes. This is one of the examples of the conflict which arises when one tries to be a business man ("none of my business"), a professional man ("protest but do it ethically"), or an artist ("hang the guilty or cut off my own ear").

But this is not a minor matter; and much as they would like to have it so it would be a dangerous business to leave to the town-planners alone. Sigfried Giedion has pointed up the problem:

> When we briefly outlined the attitude of the town planner of today, we stated as a fundamental requirement that town planning can never be conducted without due consideration of the present conception of life and its expression through contemporary artistic means. There is a prevailing unity unconsciously under-

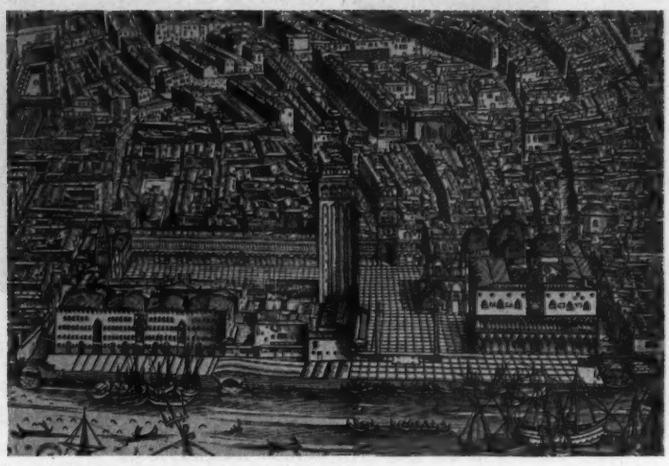
[14] *Montague, C. E., The Right Place, Doubleday, Page and Company, Garden City, New York, 1924, p. 30.*

Ewing Galloway



". . . sounds like Los Angeles in 1950 . . .

Bettman Archive



. . . quite as much as Venice in 1570"

> lying all technical, engineering, social, and aesthetic problems. As in the nineteenth century, however, too often those who have influence on the shaping of cities are experts in all practical and engineering questions but without any certainty, understanding, or feeling in what is the artistic equivalent of their practical creations. . . .[15]

In this realm surely there is a chance for the architect to act on behalf of humanity as against the individual.

The atomic bomb and the attendant sociological and political problems of decentralization both accentuate the problem. It would have been real even if efforts to split the nucleus had failed. It is real even for cities, and there are many, which lie under no threat of atomization. It was real to the Venetians of the Renaissance and they solved it in the sixteenth century in a way which was happily reported by Francesco Sansovino:

> . . . . These and many other buildings near by of more or less importance form a vast and great city which will appear to the subtle not as one but as many separate cities all joined together. If her situation is considered without the bridges, one will see that she is divided into many large towns and cities surrounded by their canals over which one passes from one to the other by way of bridges, which are generally built of stone but sometimes of wood, and which join her parts together. The shops which are spread all over the city also make her appear many cities joined into one because every quarter has not only one but many churches, its own public square and wells, its bakeries, wineshops, its guild of tailors, greengrocers, pharmacists, school teachers, carpenters, shoemakers and finally in great abundance all else required for human needs, to the extent that leaving one quarter and entering another one may say without doubt one was leaving one city and entering another — to the great convenience and satisfaction of the inhabitants and to the great surprise of strangers.[16]

If this sounds like Los Angeles in 1950 quite as much as Venice in 1570 then we may recall what distinguishes one from the other and also wonder whether the pattern of our modern spread-out city, more subtly worked out, may not indeed be the challenge for architects of the present.

It would be possible to say much more about this relation of the architect to humanity — about problems of scale and monumentality for example — and problems of spirit as against problems of toilets and elevators but let us rest this part of the issue on the question, how much should the architect consider the community in which he is proposing to build a building, be it never so noble, and how large is this community?

The second large question is more difficult and hence will take still less time. It has to do with architectural education and simply asks what position we are to take in an age of specialization. We cannot be specially informed about all the many things we are supposed to bring together into a building. What does this say as to our capacity to assume the role of which we always prate, that of coordinator? How are we to find our way to the integration the world badly needs, a world which moves faster and faster to the position of Babel where only the ignorant will be able to converse with one another? Every discipline that values itself is earnestly searching this question and we need to search it earnestly, too. Again it is Giedion who has stated the dilemma concisely:

> With our inheritance from preceding generations, we are obliged to adopt a different starting point (that is, from that of Leibnitz) and follow another route. We must take our departure from a large number of specialized disciplines and go on from there toward a coherent general outlook on our world. It is beside the

[15] *Giedion, Sigfried,* Space, Time and Architecture, *The Harvard University Press, Cambridge, 1941, pp. 548-9.*
[16] *Sansovino, Francesco,* Venetia, Citta Nobilissima e Singolare, *Descritta in XIII libri, (Book IX), Venice, 1581; translation by Giovanna Lauford, as quoted in Taylor, Francis Henry, "The Taste of Angels," Little, Brown and Company, Boston, 1948, p. 617.*



"The hand that shaped the last Tanagras"



". . . the link uniting agricultural civilizations . . . is broken"

> point whether or not this route is more difficult, more precarious, and less certain to end in success than the path that lay open to Leibnitz. It is the route that present realities force us to take. Unity, for us, will have to come about through the unintended parallelisms in method that are springing up in the specialized sciences and the equally specialized arts. These are the indications that we are nearing a spontaneously established harmony of emotional and intellectual activities. In both contemporary science and contemporary art it is possible to detect elements of the general pattern which our culture will embody. The situation is a curious one; our culture is like an orchestra where the instruments lie ready tuned but where every musician is cut off from his fellows by a sound-proof wall. It is impossible to foretell the events that will have to come before these barriers are broken down. The only service the historian can perform is to point out this situation, to bring it into consciousness.[17]

If this is the task of the historian, what more is the task of the architect? If he is to be conductor of this orchestra what talents must he develop? If he is to play a lesser role, that of concert master, or just that of a member of the orchestra, what yet is required of him?

My third and last question is the most difficult of all. What is this humanity, our client? The answer itself is verbally easy but nonetheless difficult to comprehend. *It is nothing less than all humanity.* For there can be no mistake about it that the world cannot exist indefinitely in the form of two powerful armed camps. Whether or not military conflict comes, the spiritual battle is being waged and will be waged to a finish. If, as I believe, our side has the right, and if, as I believe, the right will prevail, then this will be in sober truth one world. What kind of a one world it may be, perhaps architects may have little to say, save as citizens. For much of its early shape may be determined by the tools which forge it. But what is coming is foreshadowed in art, in our interest in historical art, in our interest, as I mentioned earlier, in primitive art. Let Malraux say this for me:

> . . . our 'resurrection' of the past is ever covering a wider field, as did the 'resurrection' of Antiquity when the Renaissance had spent its force, and that of Gothic after the passing of Romanticism. Our problems are not those of Babylon, Alexandria or Byzantium; even if it is doomed to be exterminated tomorrow, our civilization will not have been that of Egypt on the brink of death; nor is the hand which is feverishly wresting from the earth the buried past the hand that shaped the last Tanagras; at Alexandria the museum was but an Academy of Art. This civilization of the conquest of the globe calls for a metamorphosis as drastic as those associated with the great religions, and it may be that we should see in man's discovery of fire the only precedent to the mechanization of to-day. For the first time the link uniting agricultural civilizations, as mother earth unites the forests and the graves, is broken. When the Greek spirit was at its freest, the Greeks felt as much at home at the court of the Achemenides as did the Byzantines at the Sassanian court; photographic reconstitutions of a Roman street with its shops and stalls, its veiled women and men in togas, conjure up less a London street than a street in Benares; when they discovered Islam, our romantic artists thought to have before them a living picture of the ancient world. Our age is the first to have lost its share of Asia. This first worldwide art culture, which is bound to transform modern art . . . is not an invasion, but one of the crowning conquests of the West. Whether we like it or not, the West will light its path only by the torch it carries, even if it burns its hands and what that torch is seeking to throw light on, is everything that can enhance the power of Man.
>
> Rome welcomed in her Pantheon the gods of the defeated.[18]

If Malraux would let me add to his majestic sentence about the power of man the simple words "and dignity," I should say that this is the breathtaking responsibility confronting the people of the United States. This responsibility will take many forms but, regardless of the reference books, art and architecture will be one of the major ones.

Now what do all these words mean? They mean that this is no time in the history of the Western World to espouse fear or to disclaim beauty. This is not a time when every sinew in every man should be strained only for the attainment of the practical. It is not a time when we should fall easy prey to the fallacy of defining a few types of men as useful and the rest as expendable.

[17] *Giedion, Sigfried, op. cit., p. 17.*

[18] *Malraux, André, op. cit., pp. 155-56.*

Artists and architects should go out to meet this challenge head on. They must not trim their ideals to every blast but must rather incessantly seek in their work the gay, the pleasant, the human, the moving, the beautiful, so that the days we spend in life may be uplifted by our constructions and not pushed down far below the level of unvarnished nature.

But as we do this to the top of our bent, let us never deceive ourselves that it is enough or that our accomplishments will by themselves bring about a society nearer to our hearts. It is only in the converse that the full truth may be found. And our primary task we share with all artists and all professional men, to do our own particular tasks with decency and grace and to work together to lay the better foundation which we all need if we are to build well. As Matthew Arnold describes Morality:

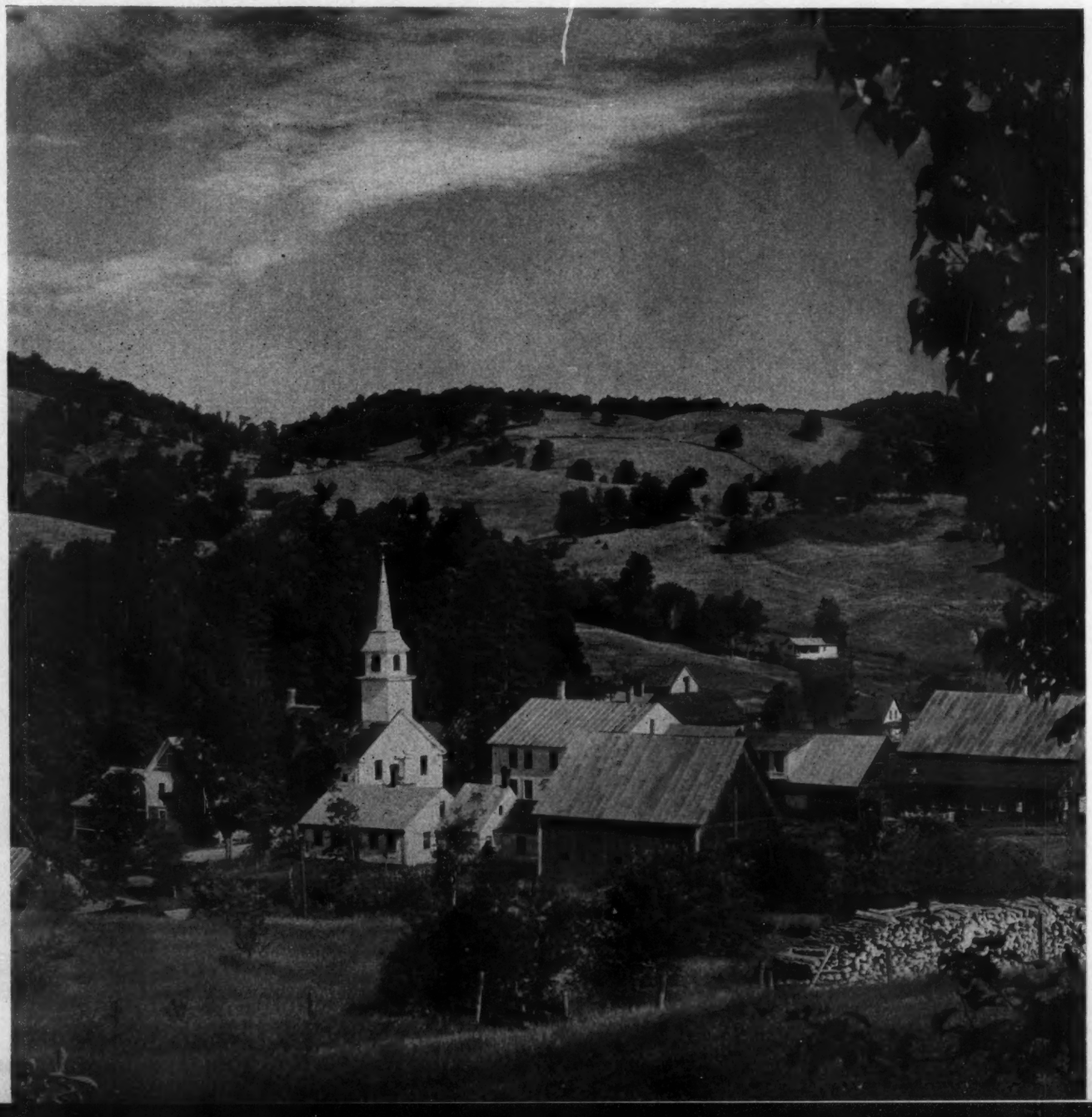
> With aching hands and bleeding feet
> We dig and heap, lay stone on stone;
> We bear the burden and the heat
> Of the long day and wish 'twere done.
> Not till the hours of light return
> All we have built do we discern.[19]

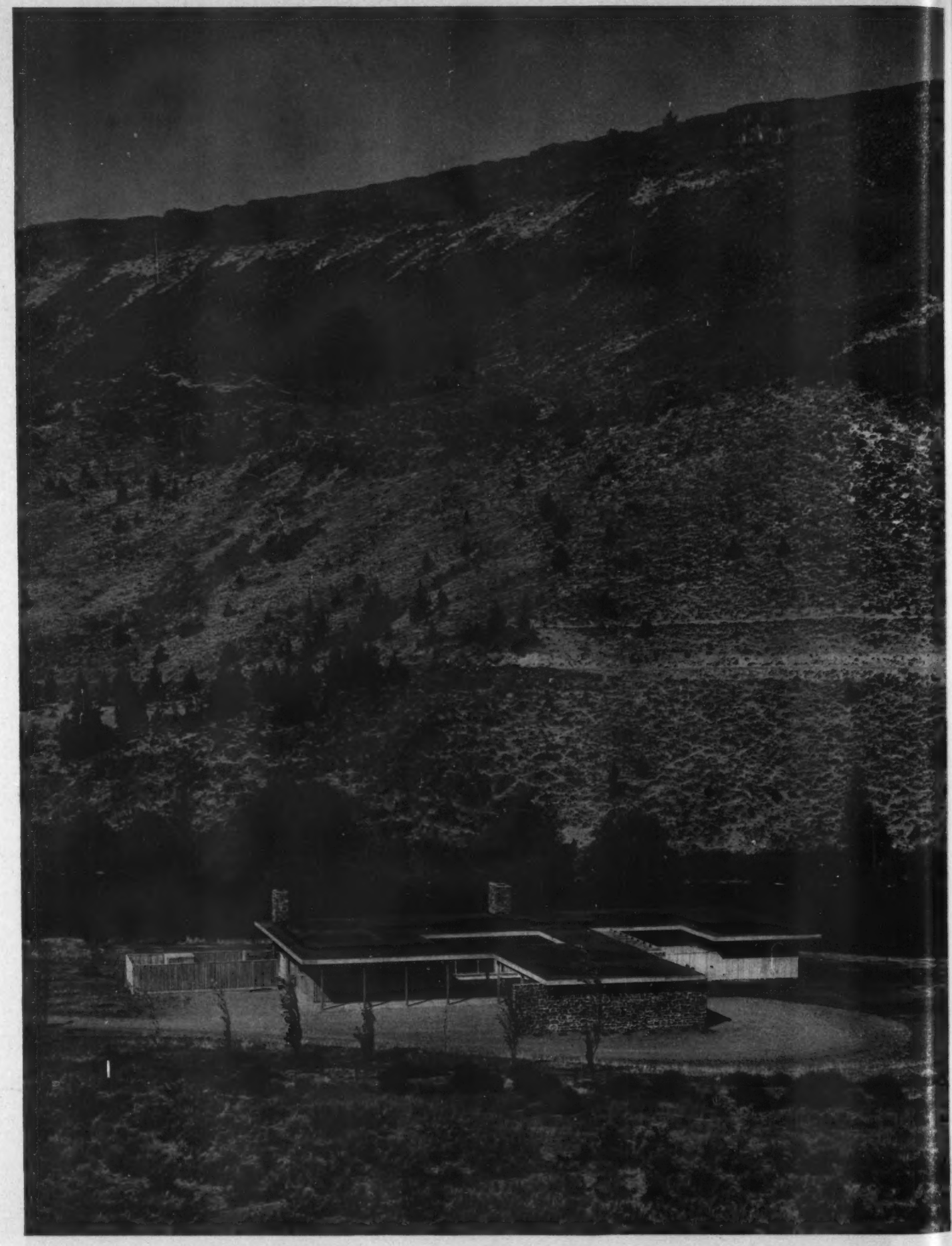
Permit me to end this garland of quotations with one from the same source that started me off. The Psalmist reminds us:[20]

Behold, how good and how pleasant it is
For brethren to dwell together in unity!

[19] *Arnold, Matthew, "Morality," stanza 2.*
[20] *Psalms CXXXIII: 1.*

Ewing Galloway





VACATION HOUSE IN OREGON

FOR MR. AND MRS. ROBERT WILSON, WARM SPRINGS, OREGON

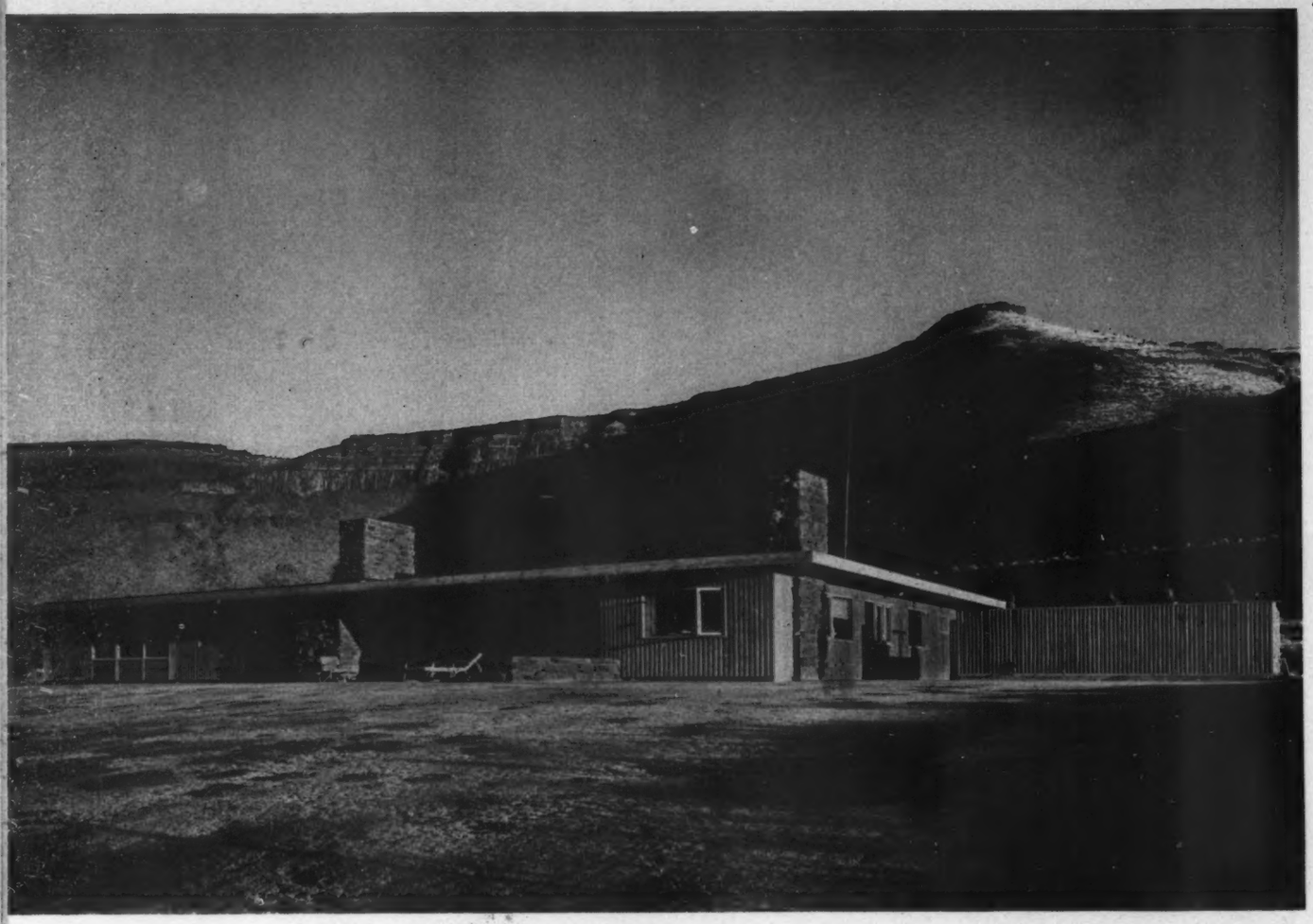
Pietro Belluschi, Architect



Dearborn-Massar

Situated in excellent hunting, fishing and riding country, on the bank of the Deschutes River, this house is designed for comfortable summer occupancy, for entertaining guests, and for use by the owners a few days each week throughout the year. The family's children come often to ride; there is a separate wing for the owner's parents to use when they wish; overnight guests are frequent

OREGON HOUSE

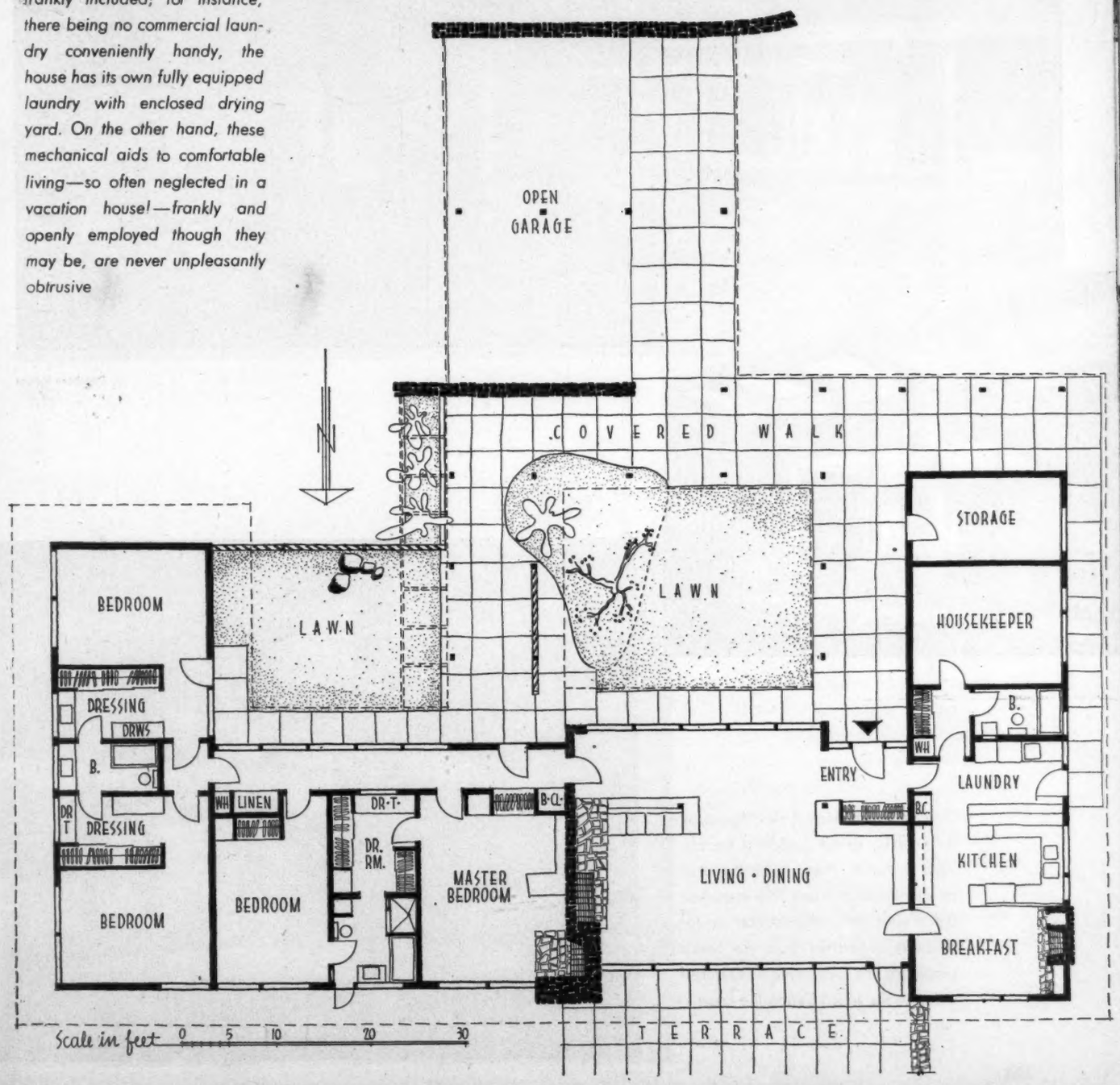


Dearborn-Massar



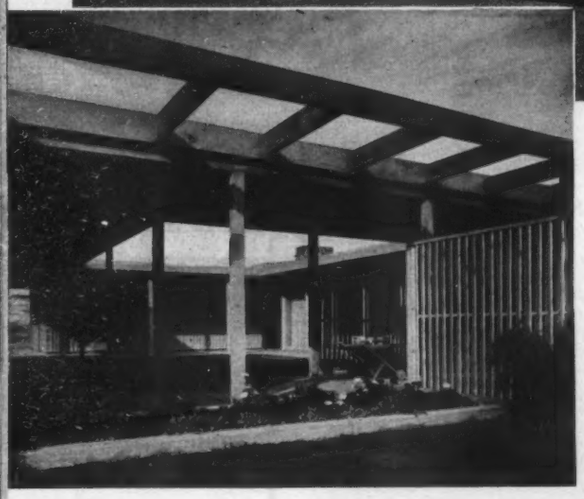


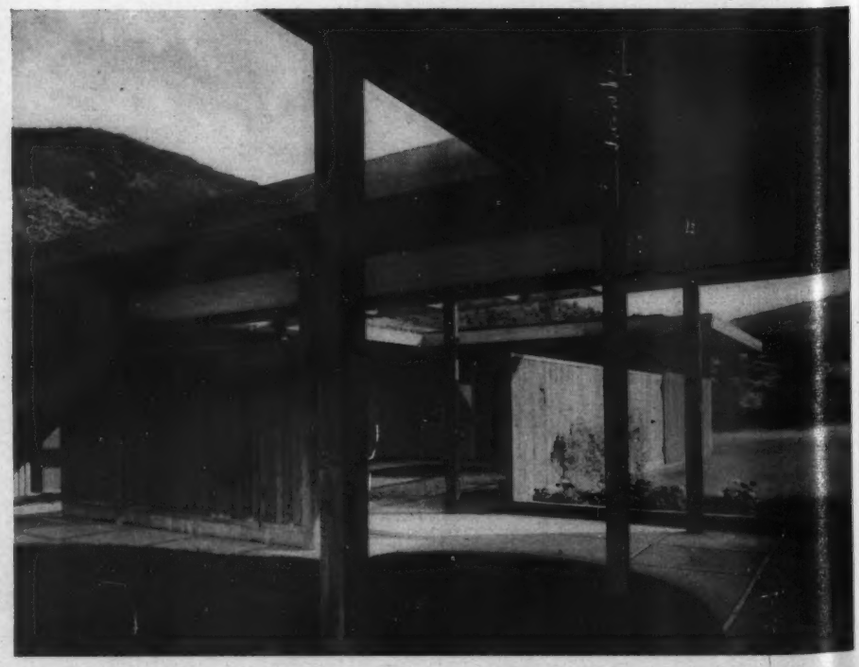
Since there are usually many people around to enjoy the house, living room, dining space and kitchen are ample in size. The house is decidedly informal, but its informality has not been allowed to mean a rugged lack of comfort. Whatever is needed in the way of amenities is frankly included; for instance, there being no commercial laundry conveniently handy, the house has its own fully equipped laundry with enclosed drying yard. On the other hand, these mechanical aids to comfortable living—so often neglected in a vacation house!—frankly and openly employed though they may be, are never unpleasantly obtrusive



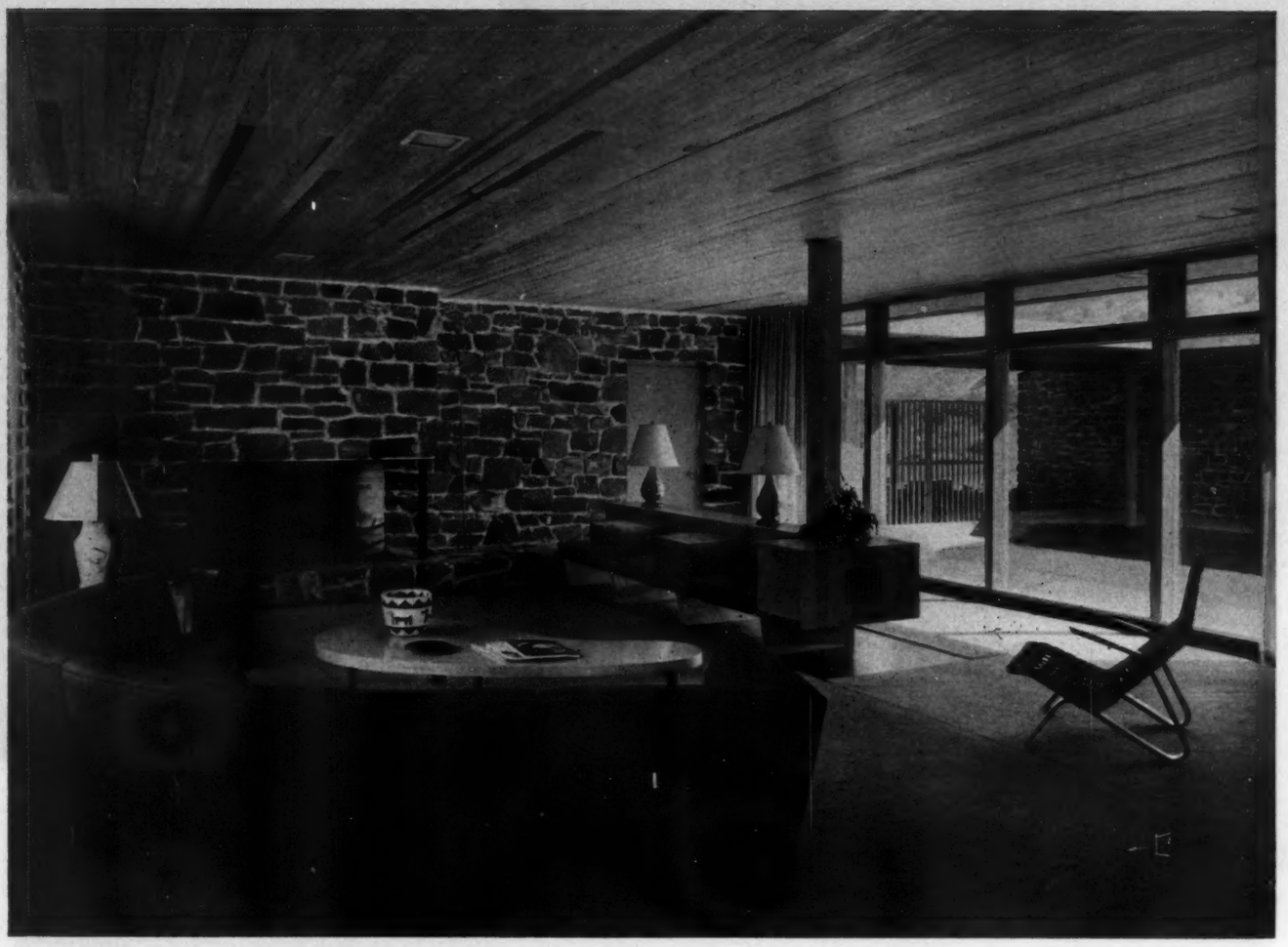


Dearborn-Masser





One arrives at this vacation house by automobile, so the carport is the obvious entrance. Here, as in the case of interior mechanisms, the mechanical means of transportation is judiciously separated from the house proper by the masonry and louvered wood walls which define the court





On facing page: three views of the central court; left, private court adjoining the grandparents' room; above, living room. Local materials are extensively used: black and gray volcanic stone masonry and rough-sawed pine boards and battens stained a warm gray form the walls. Natural though these may be, there is no self-conscious striving for rusticity but rather a true naturalness. The curved sofa and leather fireside chair are green; the built-in sofa's cushions are coral; the coffee table is natural wood; and the natural cork surfaced concrete floor is radiantly heated by means of electric cable buried in it

From the more formal dining area (right) one door leads to the breakfast room and kitchen, another to the outdoor terrace where meals may also be eaten. The breakfast room-kitchen-laundry (below and facing page) are frankly combined, definitely utilitarian and unashamedly pleasant. These are no sanitary engineered work-areas; the cheerful fireplace wall, the wood cupboards and the rose-pink plastic which covers work-counter tops make this part of the house gay as well as useful







Dearborn-Massar



At the other end of the living room, shown above, is a door leading to bedrooms









There you have the Wilsons' vacation house, built on the banks of the Deschutes River near Warm Springs in Oregon. It belongs in its wide-open setting. Yet curiously there is no insistent effort in its design to blend it into the landscape — none, at any rate, which forces itself upon the occupants. One cannot say of it that a pitched or hipped or gabled roof might have made its outline ape the profiles of the surrounding hills. Such a comment would verge on the silly, and so would any nonsense about its flat roof providing a welcome, relieving contrast to its rugged surroundings.

Neither is it a simple, unsophisticated cottage, nor does it possess any characteristics remotely cute. It is natural, as a place for relaxation should be natural; and how artfully has this human naturalness been achieved! It has its full share of glass walls and ventilating louvers, of contrastingly heavy piles of rough masonry and of unassuming wood, but not once is the contrast permitted to become a shock to the nervous system or does the common contemporary device become a cliché. The bedroom illustrated above is a comfortable bedroom, in which fragile glass butting into solid masonry takes its relative place just as satisfactorily as the plentiful built-ins and storage space do.

One more comment: to offset the possibility that the wide-open countryside might overawe the occupants, all the living areas focus inward on the series of courts.

Solidly built, with excellent craftsmanship, the house has a more or less conventional wood frame supporting a flat roof with built-up surface. Foundations and floor are concrete; in the slab are buried the electric radiant heating cables. Except for a few casements all glass is fixed, double-pane to provide insulating value. Rooms are ventilated by wood louvers with interior hinged panels. Interior walls and ceilings are pine boards; floors are covered with cork. The roof has 2 in. mineral wool insulation; the floor slab, vermiculite insulation. Sheet metal work is galvanized iron. All wood sills are treated to prevent decay. Kitchen and laundry are fully equipped with garbage disposer built into the kitchen sink, electric range, dishwasher, refrigerator, home freezer, automatic clothes washer, electric dryer, exhaust fan, incinerator built into breakfast room chimney, wood cabinets and laundry hampers, plastic counter tops. Domestic hot water is supplied by two electric heaters





Dearborn-Massar



RESIDENCE FOR MR. AND MRS.

HIGHLAND PARK, ILLINOIS

L. Morgan Yost, Architect



Nowell Ward

SITUATED on a bluff overlooking the broad Skokie Valley, this house obviously was designed to take full advantage of the view. Its plan, however, indicates that the view alone was not the major consideration. The owners — a couple with a grown son — stipulated that the bedrooms must face a small secluded glen to the south; they also required ample gardening areas around the house, and they insisted that the house be easy to maintain without servants.

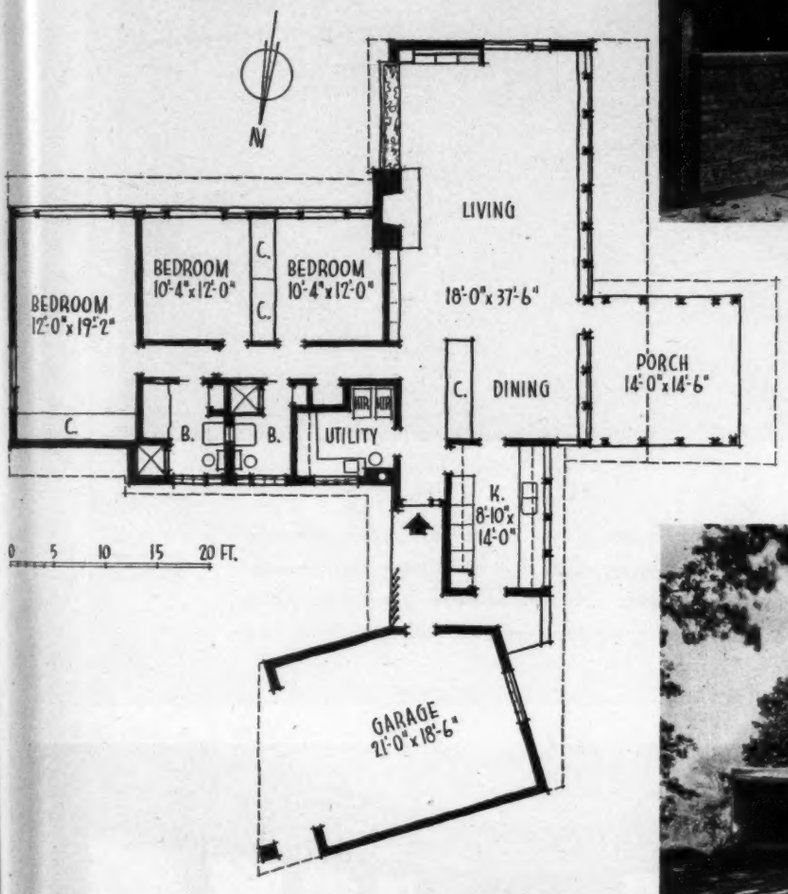
The result was a T-shaped plan with living room, dining room and kitchen opened up to the valley view and accented by a projecting porch. The three bedrooms, two baths, and utility room form a separate wing at right angles to the main wing, with all bedrooms facing south toward the glen as required. Prevailing winds plus differences in orientation made two heating systems — one for each wing — imperative, but a centrally located utility room accommodates both heaters.

Construction is brick masonry on concrete trench foundations and a slab floor. Walls are a pink buff, wood is natural cedar. The roof is built-up with a light tan gravel topping. Interior walls are generally plastered, floors are oak parquet. Windows are fixed glass with ventilation louvers.

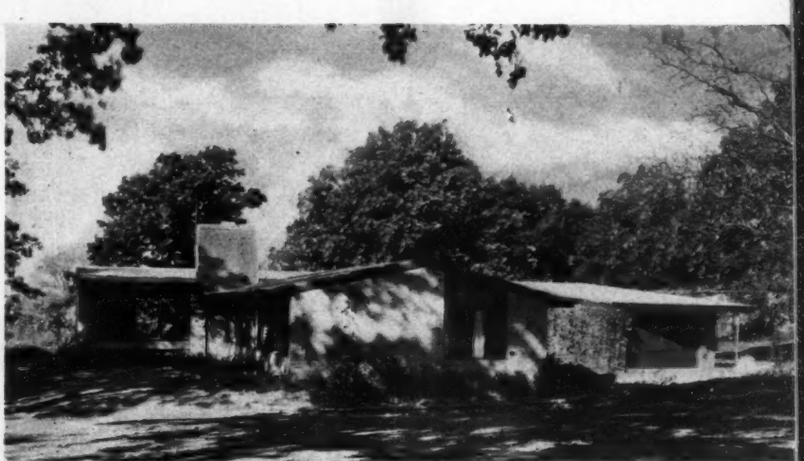
NORMAN C. DENO



Nowell Ward



John Replinger



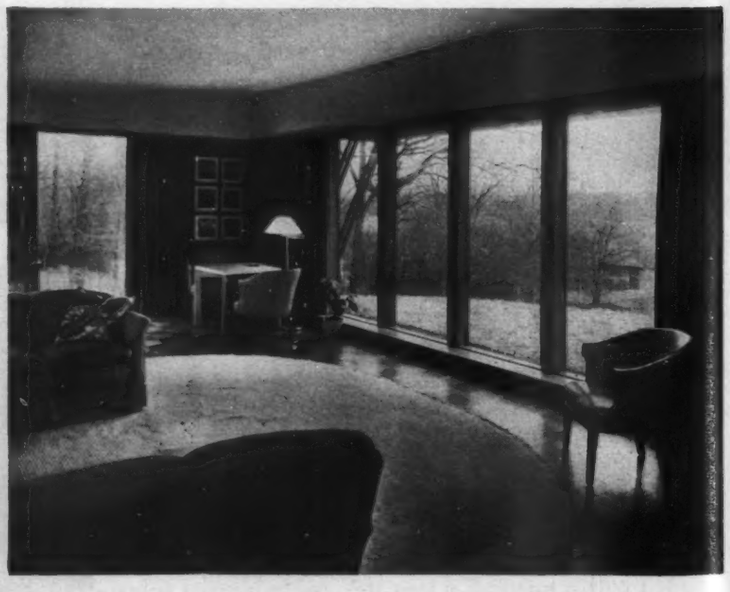


Top, right: the kitchen is strategically located, combining view with direct access to both front door and garage. Garage is angled (two views, right) to provide a small entrance court. Opposite: living room faces west, overlooking the valley

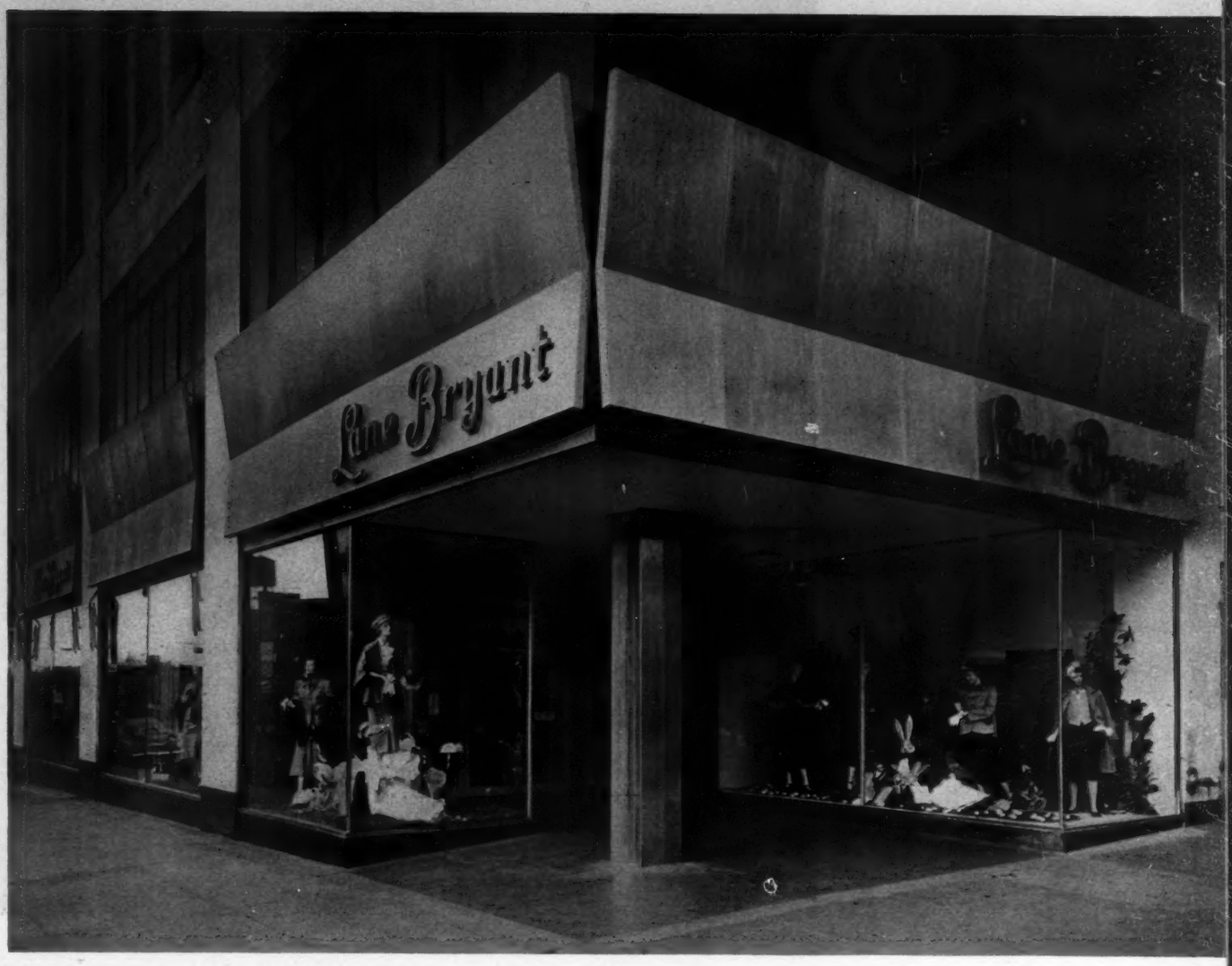


Living room looks toward glen (above) as well as toward main view over Skokie Valley (below, right). A slanting window and generous planting box give the owners a chance for winter gardening. Dining area (below, left) is separated from entrance hall by built-in closet





Nowell Ward



Ben Schnall

LANE BRYANT—BROOKLYN

Sanders-Malsin-Reiman, Architects

John W. Harris Associates, General Contractor

CHIEF PROBLEM of the architects in converting this L-shaped building for Lane Bryant was the luring of customers from the main entrance to the main sales area. The building occupies a corner site with the long arm of the L stretching back from the entrance as a narrow corridor leading to the elevators and upper floors (plans, page 116).

The building is a very old one, formerly used for fur storage. The exterior was left unchanged except for new show windows and stainless steel spandrel panels and signs which were fastened directly over the existing cast iron spandrels. The corner was opened up so that the show windows would be clearly visible from both streets at the intersection. The three lower floors were remodeled for sales usage, the fourth floor was converted to offices and a beauty parlor, and the balance of the building was left for fur storage and mechanical equipment.

On the ground floor the long Smith Street wing was given over to counter sales and made a frank corridor toward the rear sales area. Since traffic here is heavy, the teak plank floor is rather surprising; brushed nightly with a sealer, it is bearing up very well, the owners report, and is proving well worth the cost (twice that of terrazzo) because of the warmth of its appearance.

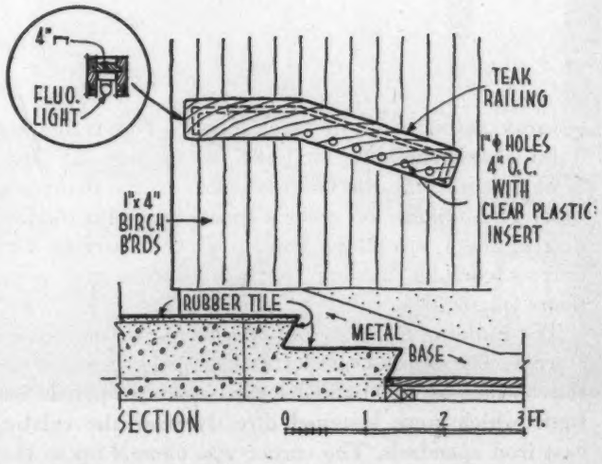
Despite a difference in ground level, there are no stairs on the main floor of the Smith Street wing. The entire wing is a continuous ramp from the entrance to



the elevators. At the end of the "corridor" a stylized arrow on the wall discreetly points the way to the right toward the main sales area. Fluorescent-lighted teak railings line the several steps at the wing-junction, again leading the customer on toward the more important areas of the store. Elevators, also at the junction, have been placed to open out toward the main areas.

The poor condition of the existing walls precluded the use of plaster and made a dry type of construction economical. Patented steel struts and connectors, fastened to the walls, serve as dividers for perforated asbestos cement wall panels, and as standards for the specially designed knife brackets which hold shelving and hang rods. The standards were designed for complete flexibility, all brackets being adjustable and interchangeable; the shelves can be rearranged overnight if required by seasonal selling demands.

Strong rich colors are used in all sales areas. Chandeliers, racks and special display cases were designed by the architects; cabinets are walnut, paneled walls are birch.



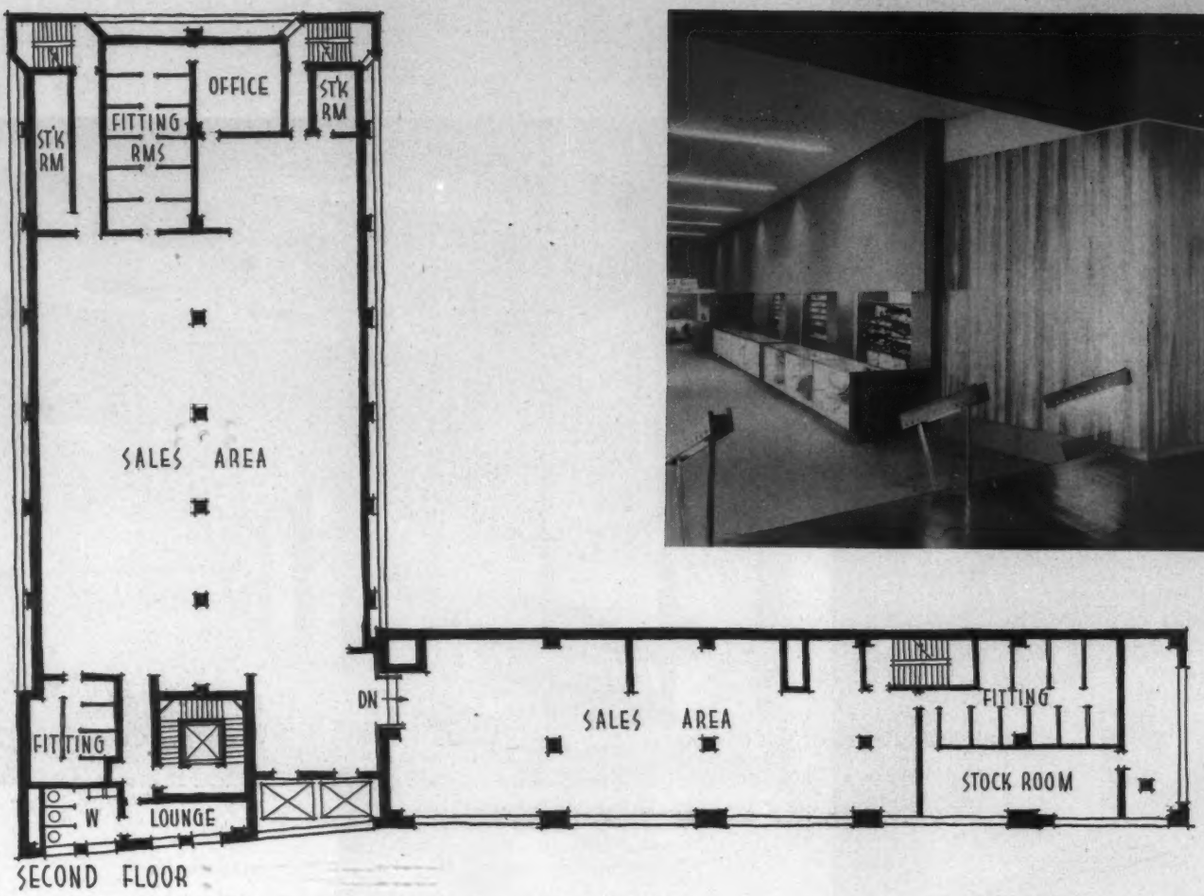


Ben Schnall

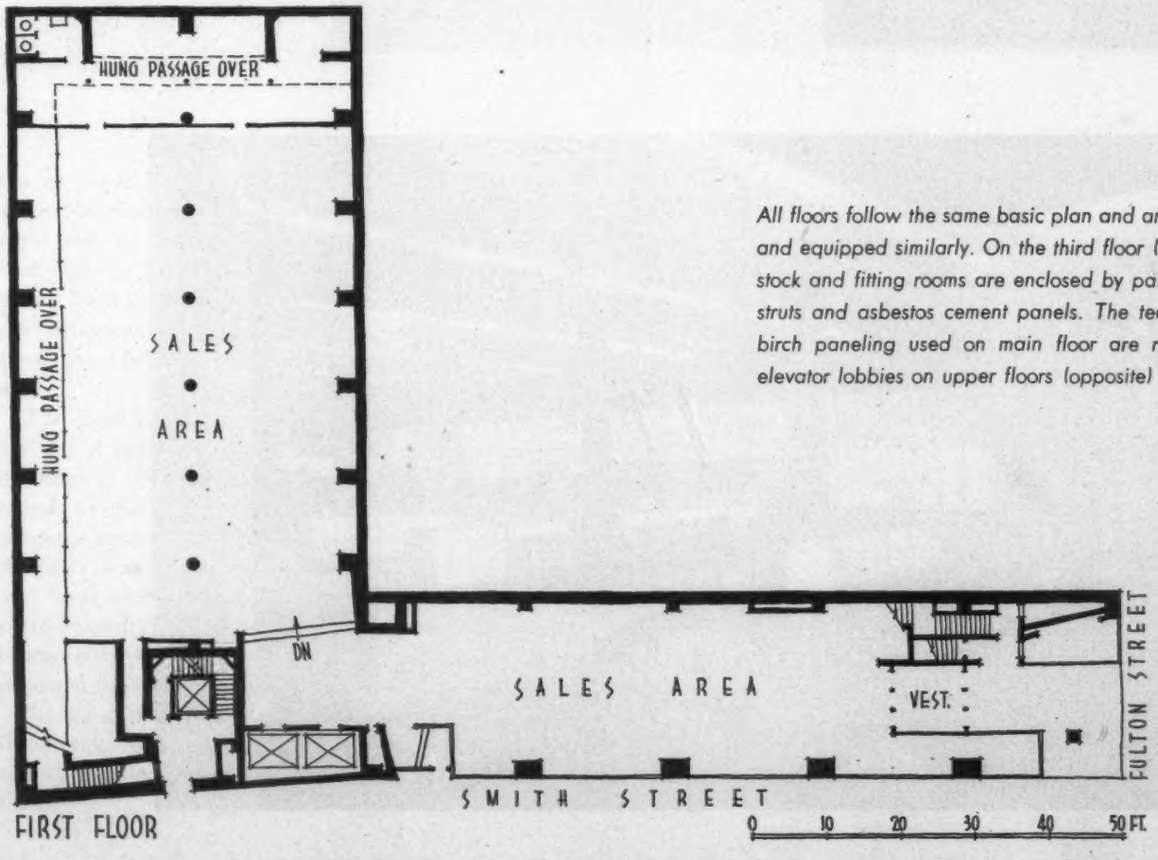


The long corridor leading from main entrance (far left, opposite page) to main sales area (below) has show windows along one whole side; over the windows is a combination curtain track and light cove





SECOND FLOOR



FIRST FLOOR

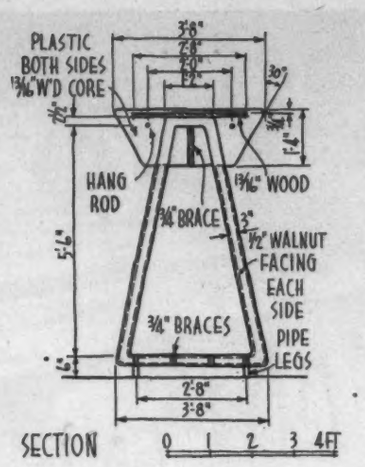
All floors follow the same basic plan and are furnished and equipped similarly. On the third floor (budget) all stock and fitting rooms are enclosed by patented steel struts and asbestos cement panels. The teak rail and birch paneling used on main floor are repeated in elevator lobbies on upper floors (opposite)

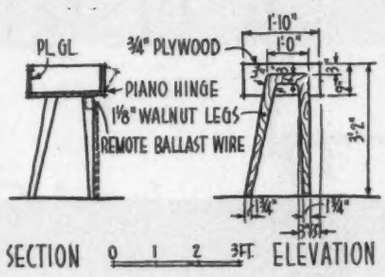


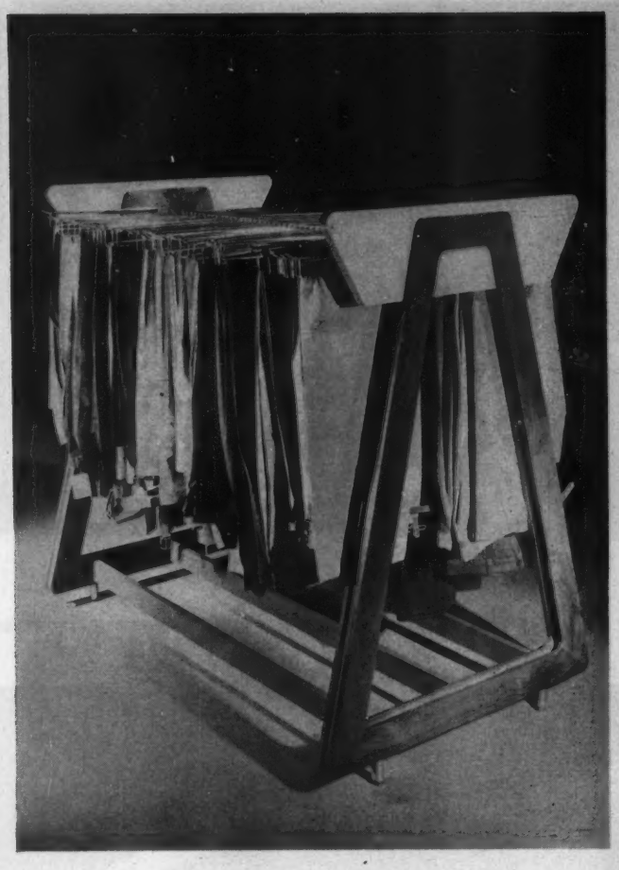


Ben Schnall









Ben Schnall





Above: air conditioning ducts are supported by patented steel struts and screened with perforated asbestos cement panels; panels are yellow, vents are bright red. Right: the architects designed dress and skirt racks and display cases


TOURINNS, INC.
A CHAIN OF MOTOR COURTS
Malcolm G. Duncan, Architect



Joseph W. Molitor

TOURINNS, Inc., is a management firm engaged in developing and operating a nationwide system of motor courts, with the intent of providing the quality of accommodations and services found in the metropolitan hotel while retaining the facility and accessibility of the motel. Each unit derives the benefits available from a large-scale operation, which would be beyond the scope of a purely local development. This plan is the result of approximately two years' intensive and extensive study of motorists' needs and the motel field, including analyses of motor courts, hotels, and public accommodations in general. There are now four Tourinns: at Fort Wayne, Indiana; Allentown, Pa.; Pittsburgh, Pa.; and Wilmington, Del. Of these, the first two have been in operation since last year; the others have just been completed.

Incorporated early in 1949, the organization has a long-term financing arrangement with State Mutual Life Insurance Co. of Worcester, Mass., and provides for local financial participation as well. At each Tourinns site there are a restaurant and service station — both under lease to national companies — and a group of single rooms in addition to double cottages arranged in a series of culs-de-sac much like a contemporary housing development. The site arrangement was intentional, to produce as pleasantly domestic an atmosphere as possible. The restaurant is intended to attract highway and local customers and to serve motel guests.

After the initial surveys and analyses, standards for site selection and for design and operation of the individual units were developed. Some 90 sites have been tentatively identified, usually on major highways near large population centers, about a day's driving distance apart. Quantity and nature of auto traffic, characteristics of the highway, surroundings, topography and stopping convenience were factors in site selection, as were: frontage in relation to total usable plot, existing competition, utilities, and proximity to recreation, to points of interest, to airports and other means of transportation.

The standard unit costs, at present prices, about $400,000 to build; rates are $8.00 double and $3.75 single. The double cottages can be converted to 2-room apartments in emergencies.

TOURINNS

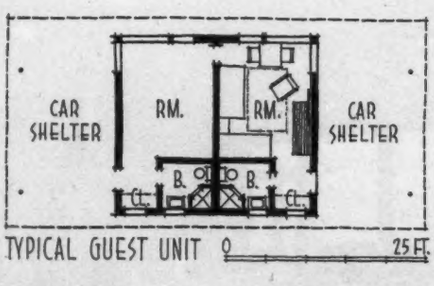
The Tourinns unit at Allentown, Pa., is shown in these pages. Across page is a typical cul-de-sac; right, office approach; center below, air view showing site layout; bottom, typical double room in one of the cottages. Knoll Associates, Inc. designed the interiors and provided furniture, drapes, color schemes, etc. Each room has a long luggage rack rather than a chest; there are no drawers or closet doors, so guests will have little reason to leave things behind



Joseph W. Molitor



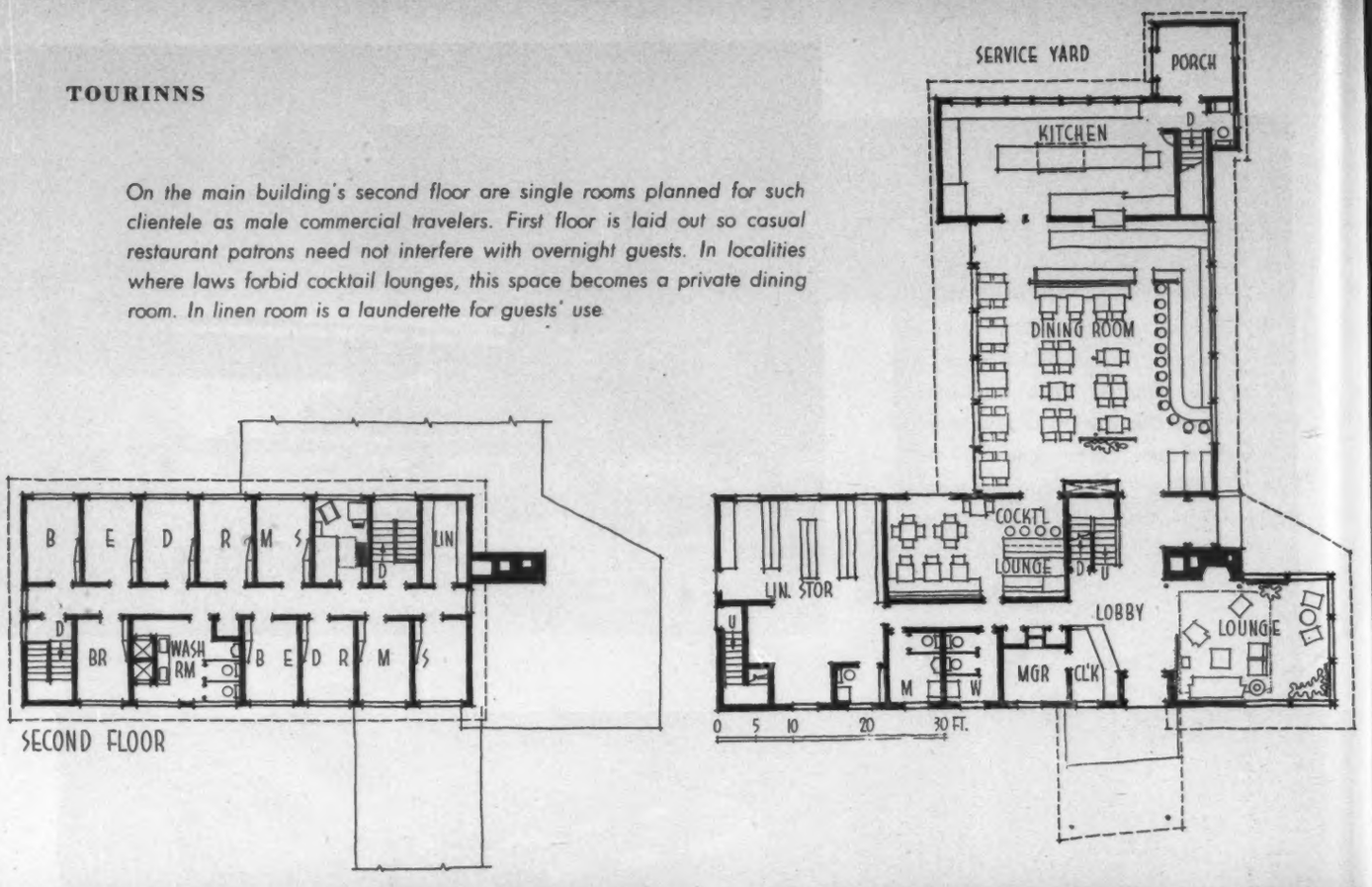
Weitner Aerophoto Service





TOURINNS

On the main building's second floor are single rooms planned for such clientele as male commercial travelers. First floor is laid out so casual restaurant patrons need not interfere with overnight guests. In localities where laws forbid cocktail lounges, this space becomes a private dining room. In linen room is a launderette for guests' use.









Joseph W. Molitor

W. Lee Moore

Landscape Architect

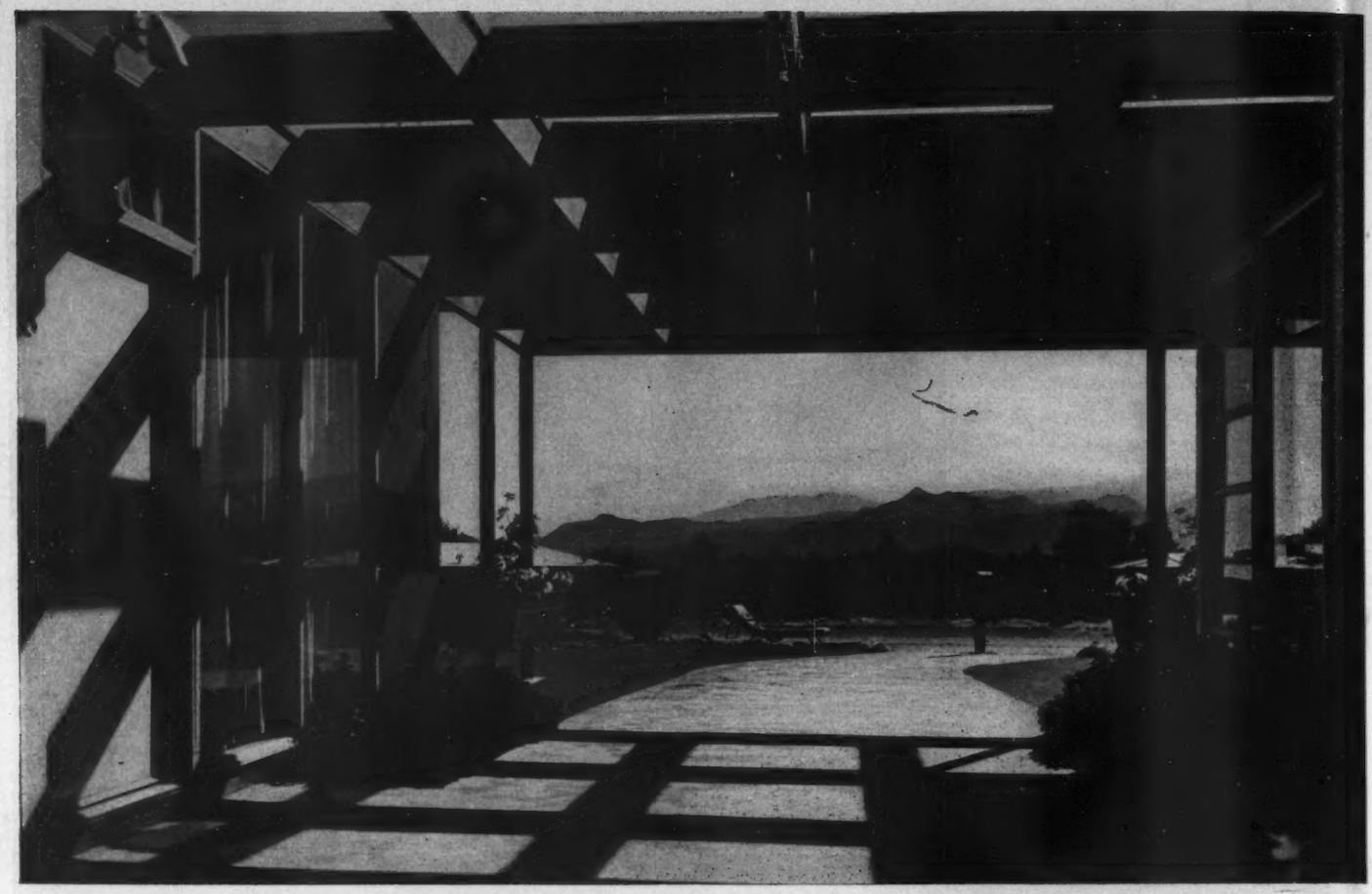
Right, lunch counter; below, lounge. This and the restaurant have ample glass areas, being public rooms where the quality, simplicity, and cheerful domesticity of the establishment can be displayed to potential guests. In contrast, the guest cottages are planned for privacy, set far back from traffic noises with high, small windows on exposed sides and larger windows opening to lawns and planting which, when fully developed, will screen them protectively. Even the road lights inside the area are only a few inches above ground, to avoid glare in guest rooms

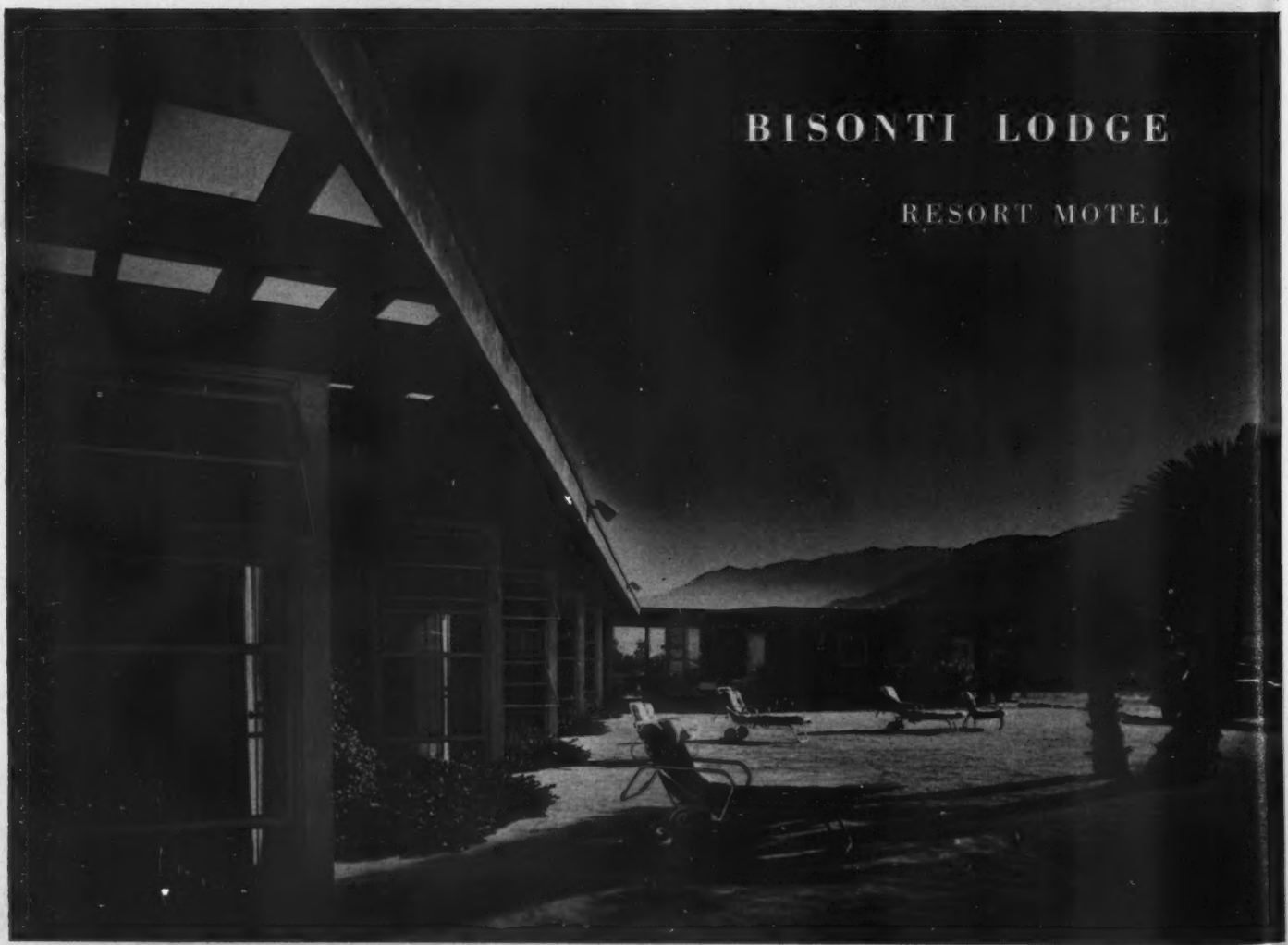






Everything about a Tourinns unit is consistent in design, although in the case of the service station (right, in background) this entailed considerable work with the concessionaire. Sign, in foreground, is used repeatedly as a trademark; as it has become necessary to add items the advisability of restudying its use has become evident



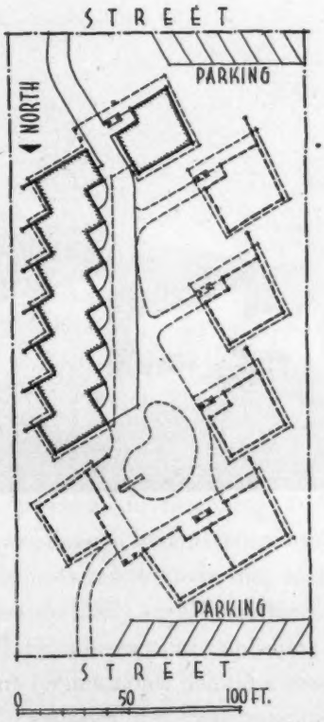

BISONTI LODGE
RESORT MOTEL



Donald J. Higgins

PALM SPRINGS, CALIFORNIA

Harry J. Williams & Assoc.; E. Stewart Williams— H. Roger Williams, Architects

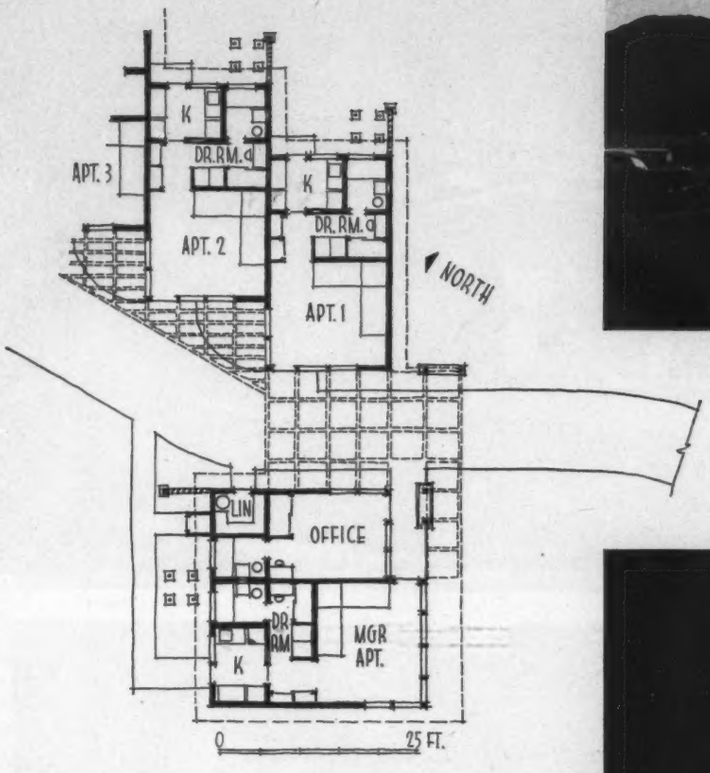


IN GENERAL, Palm Springs winter visitors are of two kinds: weekenders from Los Angeles (who want a comfortable minimum living-bedroom with bath) and vacationers from more distant points (couples or families needing more space; these usually ask for detached bungalows). Hence Bisonti Lodge was designed as a row of single room units plus a group of bungalows, all organized around a small patio and pool.

The best view lies to the west and southwest; the warm afternoon sun also comes from that quarter. To make the most of the view, the individual units were angled so their glazed walls would look in this direction, and they were connected by a louvered overhang to minimize sun heat. Only the single units have been built to date. As soon as regulations permit, the independent bungalows are to be constructed. The present buildings are of wood frame, with plastered walls and ceilings and carpeted concrete floors. The louvered roof overhang is of redwood. All units are electrically heated and cooled.

The project, which to date has cost just over $38,500 (or $9.04 per sq ft), has been very successful. It is usually filled to capacity during the entire season.





All seven of the single-room units are identical. Wood, including fir doors and frames, is painted; roof is built-up, with white surface to reflect sun. Insulation is aluminum foil and all sheet metal is aluminum





Donald J. Higgins

INDUSTRIAL BUILDINGS

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 176

INDUSTRIAL PLANTS are still one of the most urgent design problems facing architects and engineers. In the first quarter of this year Dodge reports showed that manufacturing building awards in 37 eastern states rose to $367 million, as compared with $227 million in the same period of last year, a gain of 62 per cent. Thomas S. Holden, president of the F. W. Dodge Corporation, has estimated that physical volume of manufacturing buildings this year will surpass 1950 by 57 per cent. He sees us embarked on a program of industrial plant expansion that will boost our gross national product from $280 billion in 1950 to $350 billion by 1955.

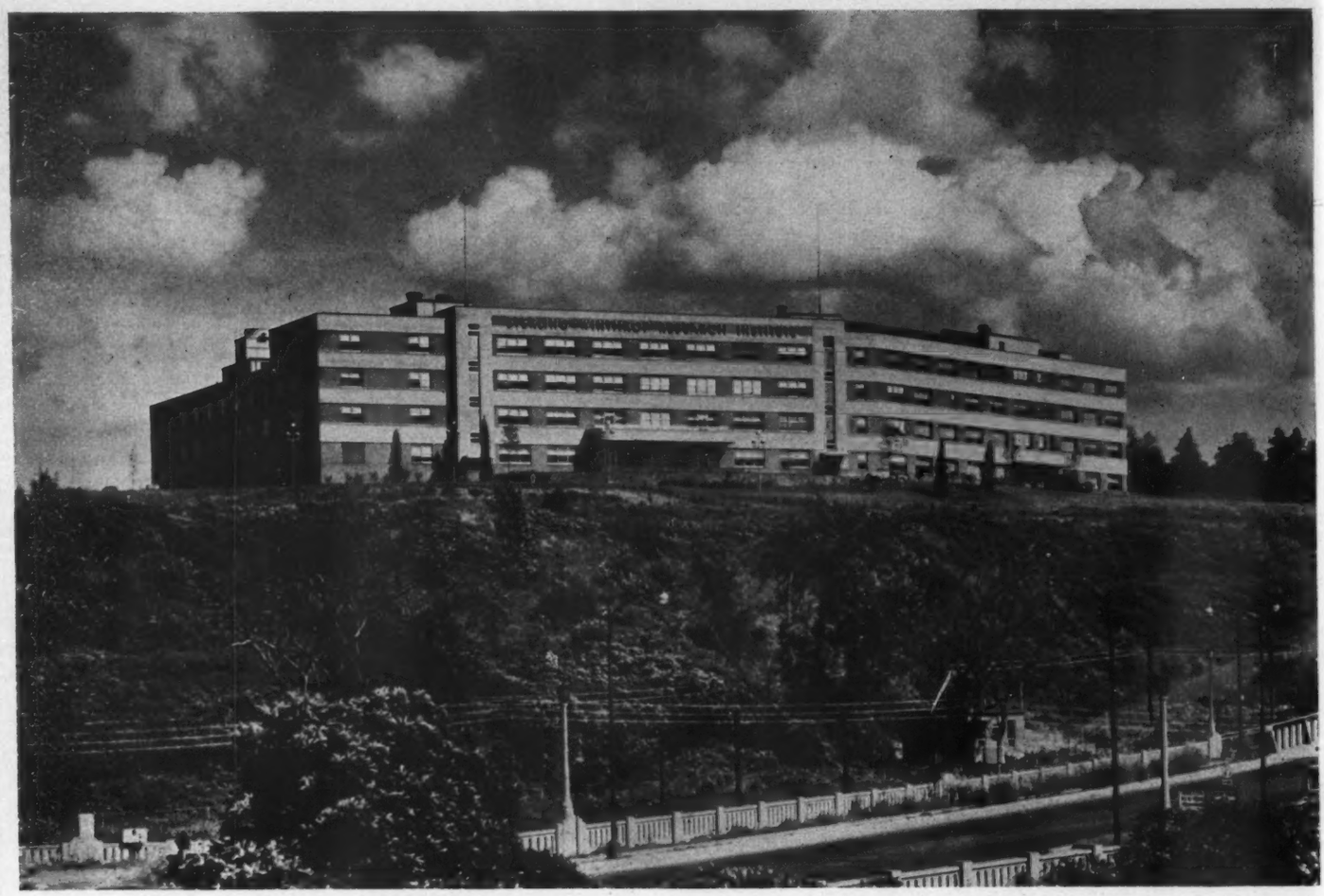
In such an expansion it may be expected that most of the materials shortages now confusing architects will eventually change into surpluses, barring, of course, all-out war. The country's industrial plant cannot go on expanding forever at the current rate, but right now the government's financing stimuli are still giving industry great incentives to build new plants.

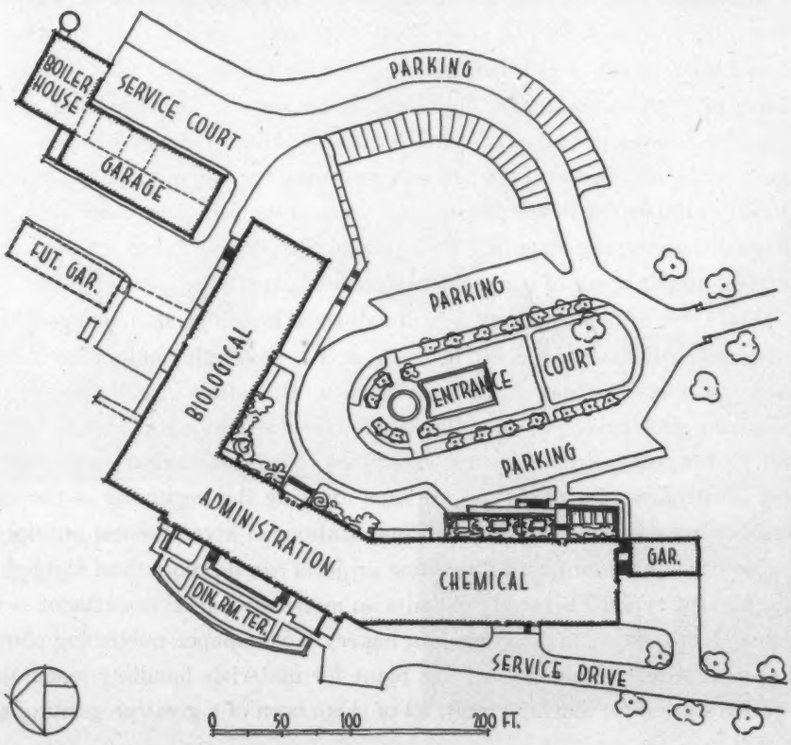
As design assignments, industrial plants cover a wide range of common and uncommon problems. In one sense, industrial buildings are easy, for their purposes and functions are very clear, and the interpretive aspects of design are straightforward, with a minimum of philosophical debate. On the other hand, factory buildings are forever posing new technical complications and cost equations are always more imposing. In one of the plants here shown, for example, the designers were able to save $100,000 by developing a new system of roof drainage (page 134). In another, a small bakery, the assembly-line system of producing bread resulted in an amazingly complex array of conveyor equipment (page 140).

And there are always new types of industrial buildings, as ingenuity develops new materials and new products to be made, and as production of familiar things reaches new volume. Two new buildings shown in this study are the result of modern servicing problems — one for the rebuilding of machine tools (page 142), and one for the servicing of diesel locomotives (page 148). This one is a particularly interesting illustration of a new type, perhaps marking the beginning of the end for the familiar roundhouse. Thus do the complications of inventiveness multiply.

No collection of industrial building projects can do more than highlight a few of the current types. This study includes an unusually varied assortment — a medical research laboratory, a small modern bakery, a newspaper publishing plant, a diesel locomotive service garage, a large plant for materials handling machinery, and a service station for machine tools, all of them born of a great program of expansion.

LABORATORY FOR MEDICINAL RESEARCH





F. S. Lincoln



Sterling-Winthrop Research Institute (Division of Sterling Drug, Inc.), East Greenbush, N. Y.

W. Stuart Thompson and Phelps Barnum, Architects

Guy B. Panero, Mechanical Engineers

Joseph Whitney, Landscape Architect

A CARTOON recently depicted a "drug-of-the-month" scheme, in which a panel of experts each month selects for subscribers the latest miracle drug. To the medical manufacturer the cartoon might be anything but funny, for it pinpoints a perennial problem — each new discovery in the succession marks the obsolescence of some earlier line of products. So medicinal research becomes not only a new means of saving lives but actually a stern competitive necessity. And competition forces the investment of vast sums in construction of new laboratory facilities.

The building site includes some 70 acres, on a high bluff commanding a view of Rensselaer, Albany and the Hudson River. The building enjoys the seclusion and quiet necessary for research, but is still visible for miles around, and its prominence is accentuated at night by floodlighting.

The building logically divided into three wings: Administration, Biological and Chemical, separating the three categories of activities. The disposition of the wings follows natural contours around a central court.

Since virtually none of the research activities could be considered as typical, the planning involved a long search for a proper space module. Finally it all shook down to a laboratory unit size of 18 ft wide by 24 ft deep, a fairly standard module for laboratory buildings. This unit yields economy of framing, construction cost, repetitive window sizes, and works out well in a great variety of combinations in use. The partial plans on succeeding pages show representative laboratory suites, but there is no such thing as standard use.

The 18 by 24 ft units were placed on each side of a 7-ft corridor, each unit daylighted with a window 12 ft wide and 7 ft high, the top of the window being almost at the ceiling line. Generally ceilings are 11 ft 4 in. from finished floor to slab. Corridors are furred to give a clear height of 8 ft 6 in., the space above serving for air conditioning, heating and ventilating ducts.

Interior partitions are all non-bearing, and mechanical services are installed so that partitions can be altered with the necessary laboratory services — drains, hot and cold water, gas, electricity, steam, compressed air and vacuum — easily available. Nevertheless, all original suites were carefully planned to the individual requirements of departments before working drawings were made. This fitting-in process lasted almost a year, each research group being given full opportunity to study its own needs.











Administration wing uses same space module as laboratory wings — 18 by 24 ft — and same fenestration. Fortunately the best laboratory module is also excellent for office use and is just about as good for spaces like main entrance lobby, above left, and the main library, below



F. S. Lincoln





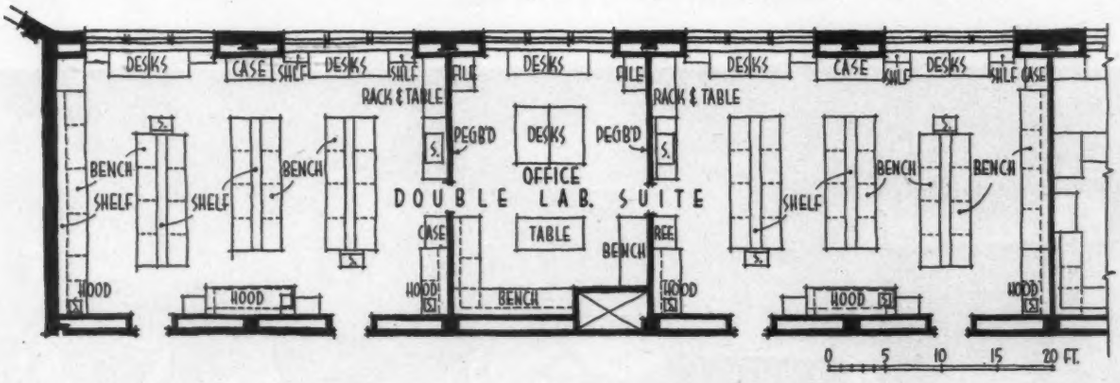
Above right: virus laboratory in the biological wing is completely isolated from rest of building, entered by air locks and on separate air conditioning system, maintaining negative pressure. Above left: mouse room, biological wing. Below: a more or less typical biochemistry laboratory







Photo left: Exhaust fan room in penthouse of chemistry wing. Above: a special chemical development laboratory large enough for distillation and centrifuge operation. Plan shows normal disposition of laboratory benches and desks



Organic chemistry laboratory

Ampule washing room in chemistry wing

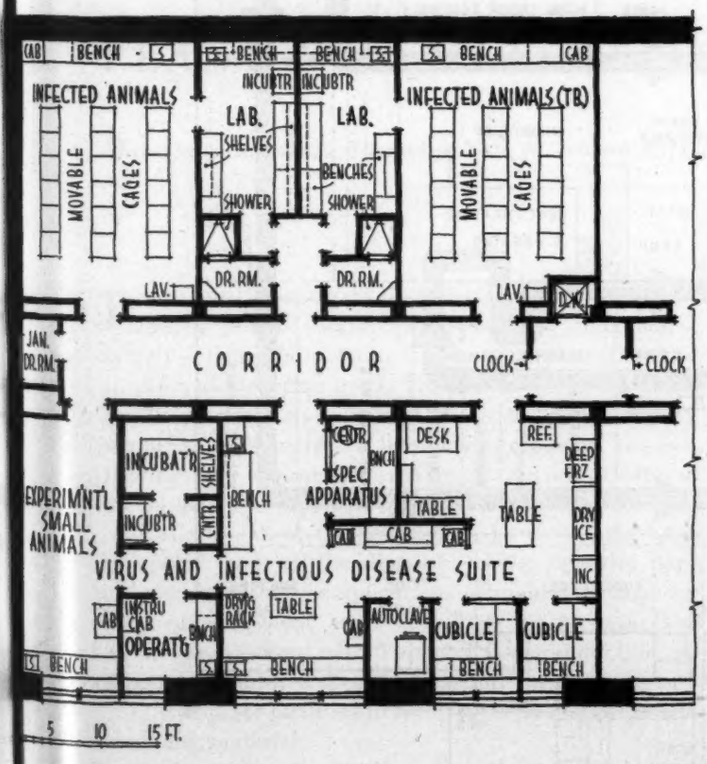






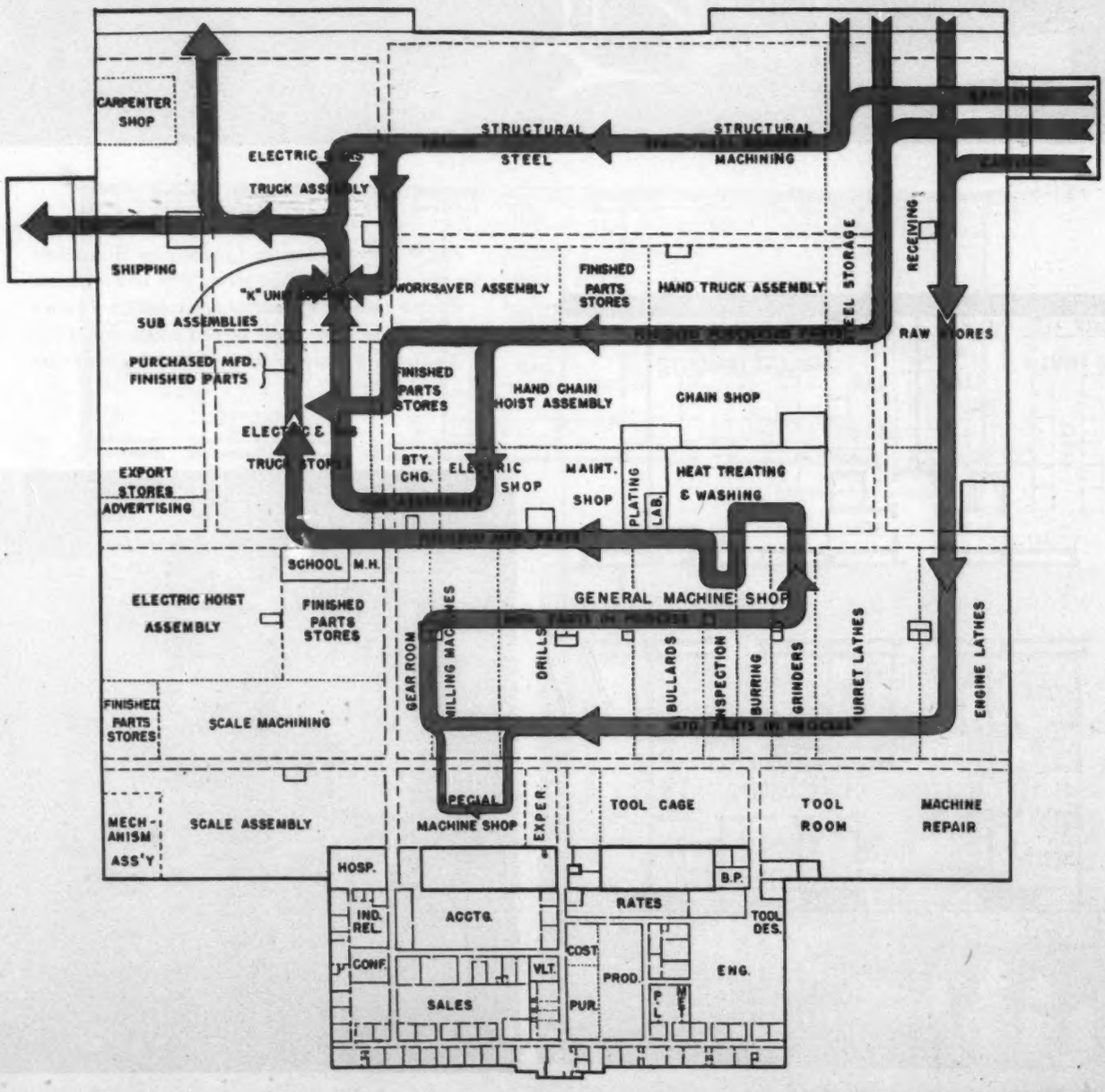
F. S. Lincoln.

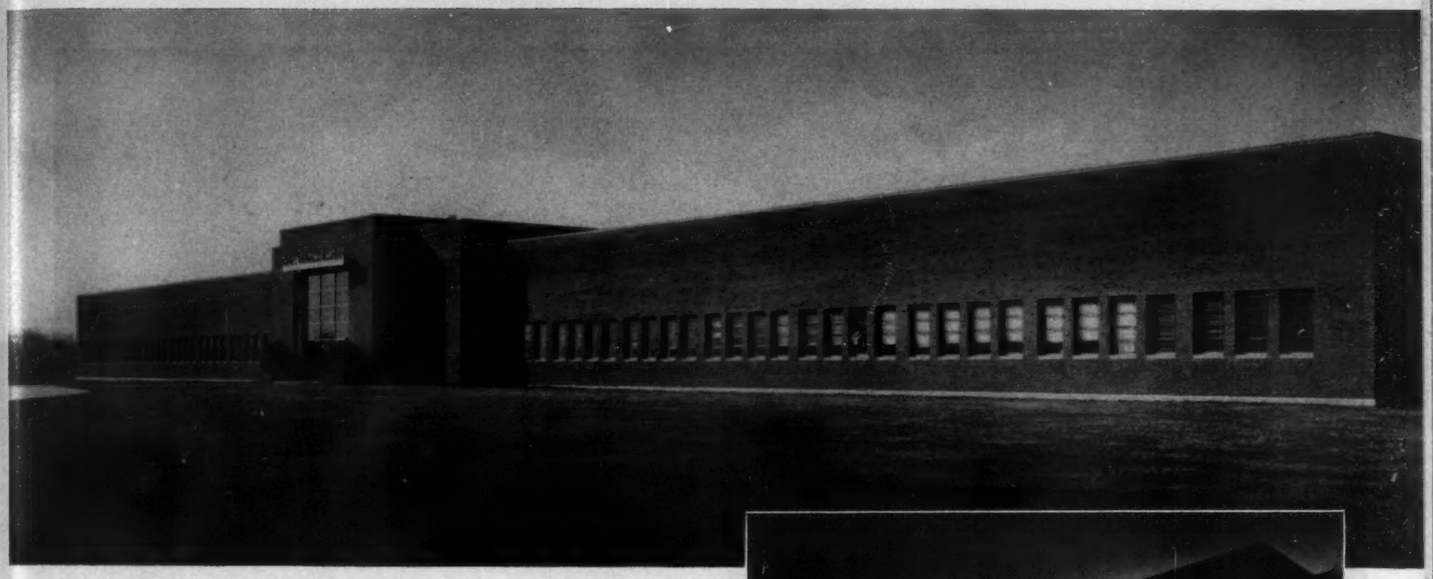
Above: pharmacology and physicology laboratories in biological wing. Plan shows virus and infectious disease suite where special precautions are necessary. Below: new study of dog rooms resulted in completely sanitary facilities for flushing out cages








CARPENTER SHOP
STRUCTURAL STEEL
STRUCTURAL MACHINING
TRUCK ASSEMBLY
SHIPPING
WORKSAVER ASSEMBLY
FINISHED PARTS STORES
HAND TRUCK ASSEMBLY
RECEIVING
SUB ASSEMBLIES
PURCHASED MFD. FINISHED PARTS
HAND CHAIN HOIST ASSEMBLY
CHAIN SHOP
EXPORT STORES ADVERTISING
BTY. CHG.
MAINT. SHOP
PLATING
LAB.
HEAT TREATING & WASHING
SCHOOL
M.H.
ELECTRIC HOIST ASSEMBLY
GENERAL MACHINE SHOP
GEAR ROOM
DRILLS
BULLARDS
INSPECTION
BURRING
GRINDERS
ENGINE LATHES
SCALE MACHINING
MECH-ANISM ASS'Y
SCALE ASSEMBLY
MACHINE SHOP
EXPER.
TOOL CAGE
TOOL ROOM
MACHINE REPAIR
HOSP.
B.P.
IND. REL.
ACCTG.
RATES
TOOL DES.
CONF.
COST
PROD.
ENG.
SALES
PUR.



Joseph W. Molitor



The Ballinger Company

Architects and Engineers

PLANT FOR MATERIALS HANDLING MACHINERY

Materials Handling Plant for Yale & Towne Manufacturing Company, Philadelphia

IN THE MODERN FACTORY materials handling machinery and its proper use are just about the whole story, largely setting the pattern for the production line and thus for the building itself. This new plant is the direct result of materials handling problems in a company manufacturing materials handling equipment. Its own facilities and assembly lines were getting out of date, so a completely new plant became necessary.

Naturally, then, the handling of parts was the basis of design, and, as the diagram on the opposite page clearly shows, the complications of making a wide variety of equipment are reflected in the layouts. The architects, working with Yale & Towne production engineers, formulated these basic requirements:

1. Adequate facilities to receive, check and distribute incoming material.

2. Short, direct routes to and from raw stores areas and processing areas to provide storage and efficient movement of materials.

3. Arrangement of machinery and equipment to provide ample room to place materials within easy reach of workers.

4. Access to machines and benches for quick delivery of materials, and for fast pick-up of outbound materials and waste.

5. Grouping of machines and departments so that movements between operations would be as short as possible.

6. Sufficient storage facilities in process between operations.

7. Stock rooms and tool cages located to reduce handling to a minimum.

8. Facilities to pack or crate and ship by all classes of carriers.

It was therefore necessary to lay out each department by an analysis of the flow of materials through each operation, and then to lay out each machine and piece of equipment. When the complete flow line of each

oseph W. Molitor





Main entrance lobby, above, is done with the same simplicity that characterizes the exterior. It opens into a products display room (center photo). Office areas and drafting rooms are kept just as open and flexible as the production areas

department and space requirements were determined, the general shape of the building was established. Flexibility of occupancy was an important consideration throughout.

The plant contains about 750,000 sq ft on one floor, and is located on a 93-acre plot on the northeast edge of Philadelphia. The manufacturing areas are not cut up by walls or barriers except for storage areas or tool rooms, and these are generally separated by removable wire mesh partitions. Where required a few areas are partitioned to confine or exclude dust, noise or heat. Thus the production lines are free to change with a minimum of difficulty.

Lockers and toilet rooms are located on mezzanine floors, located conveniently to production lines, with small auxiliary toilets at the base of each mezzanine. Most of the plant has a clearance of 18 ft below the girders; certain smaller bays are 24 ft in the clear.

Some careful computations by the sanitary engineers in the architect's office resulted in a saving of $100,000 in the roof drainage system. Briefly, most code requirements are based on run-off from pitched roofs, but a flat roof does not discharge water nearly as fast. Thus for a certain assumed intensity of story, the run-off time is higher, and the storm drain pipe sizes can be reduced accordingly.


Hoists





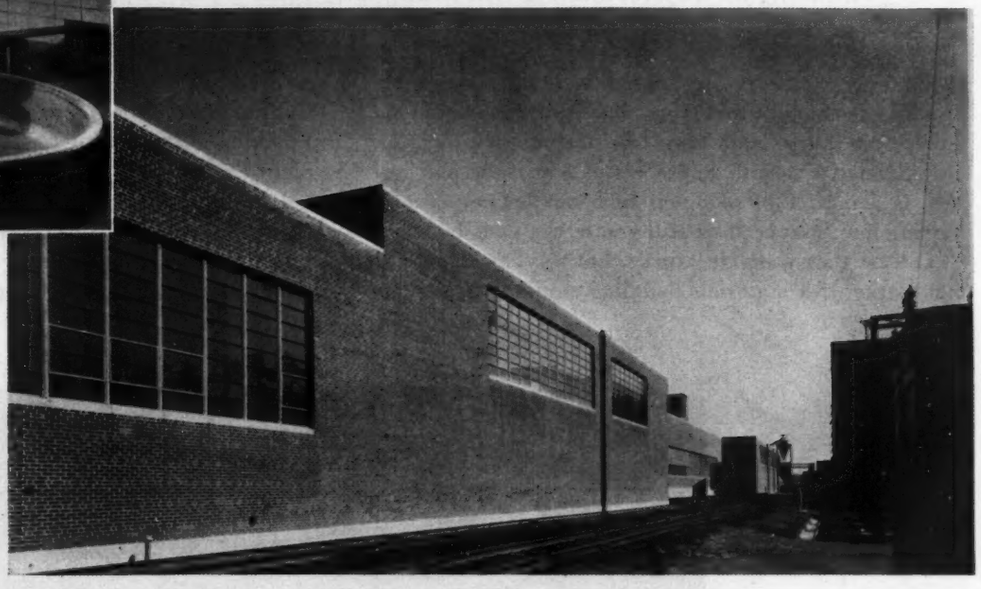





YALE







Left, above: careful positioning of machine tools shortens handling routes. Left, below: end of the production line for motorized handling trucks. Separate boiler house (at top, right) now contains three boilers, two of 35,000 lb per hour capacity for winter use, one of 14,000 lb for lighter summer loads. Plant is heated by ceiling mounted unit heaters, arranged also for use as ventilators

Joseph W. Molitor





ASSEMBLY-LINE PLANT FOR BAKING BREAD

Building for Taystee Baking Co., Beaumont, Texas

THE ONCE-SIMPLE PROCESS of baking bread has now become mechanized and streamlined, until a commercial bakery offers the same problems of a factory for, say, automobiles. Every little process, down to the pinch of salt, is a matter of so much time on the perpetually moving line; maybe they still grease the pans by hand — at least they wash the trucks that way. So the architect works with materials handling equipment, designs an assembly line, leading it in and out of warming ovens, cooking ovens, cooling cabinets, all neatly calculated as functions of time and temperature, so that this little plant can turn out 5000 pounds of bread per hour.

Building is constructed of glazed hollow tile, for sanitation in storage and process areas. A special high velocity ventilating system removes flour dust from storage areas and heat from processing areas.

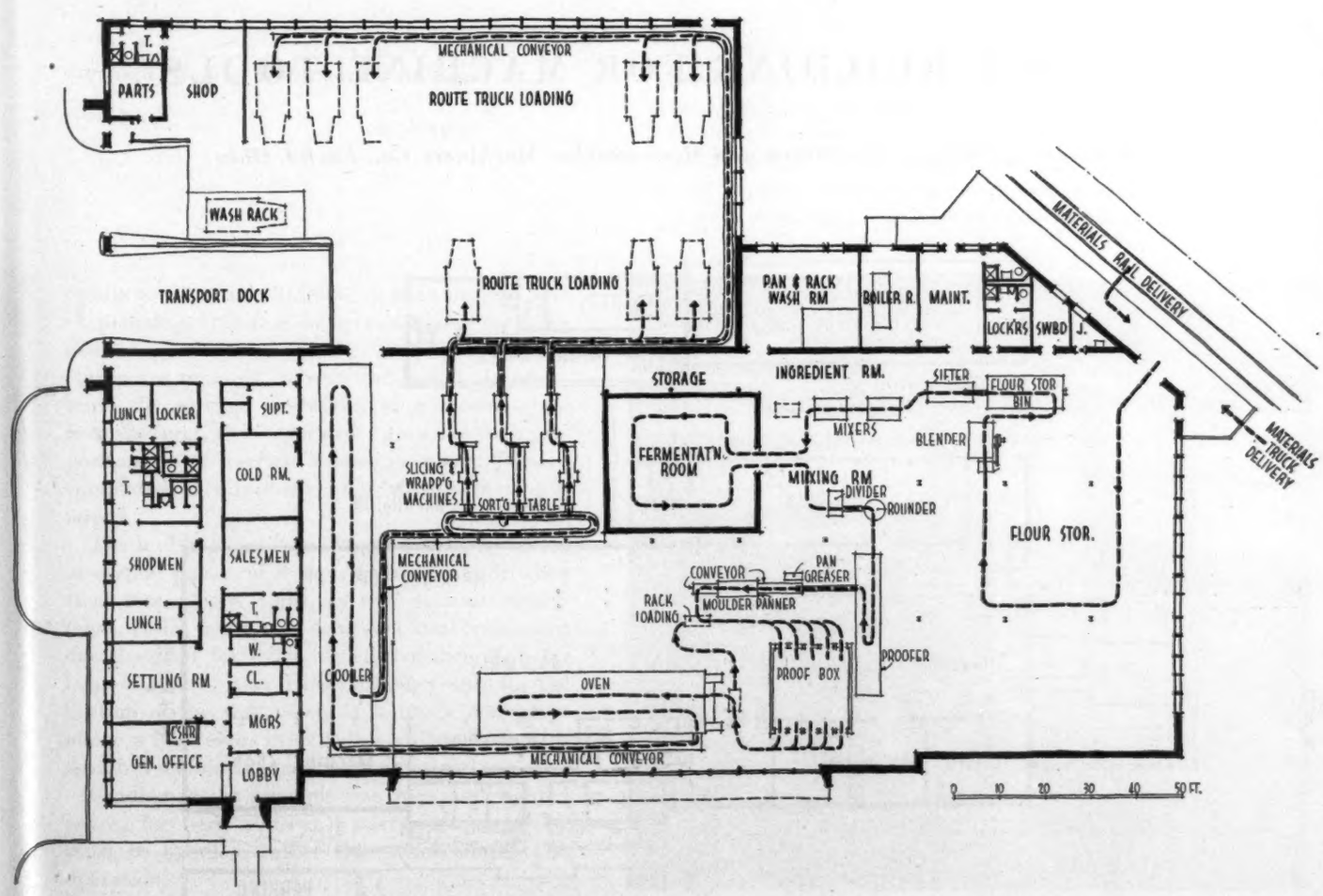




Like many another modern food plant, this one takes advantage of a location on a busy highway to display its main processes to the public. The assembly line is carefully figured out to put the ovens right behind the front windows

Stone & Pitts, Architects and Engineers

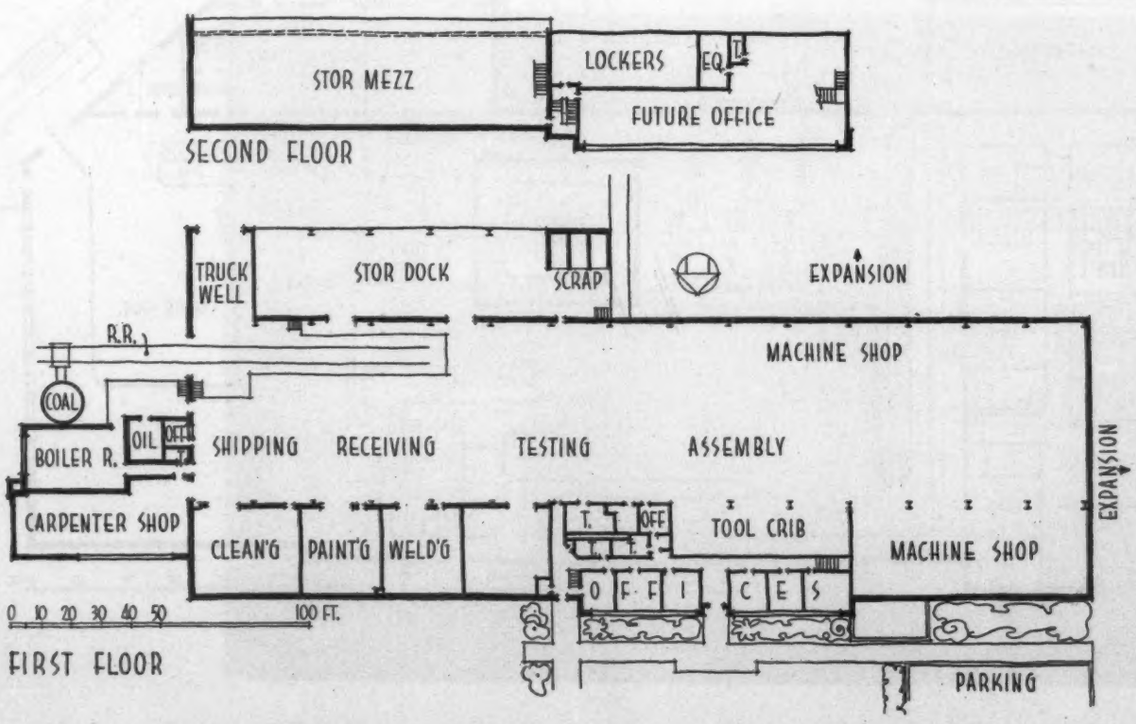
Taylor Milton, Mechanical and Electrical Engineer





SERVICE BUILDING FOR MACHINE TOOLS

Reconditioning Plant for The Motch and Merryweather Machinery Co., Euclid, Ohio







Garfield, Harris, Robinson & Schafer

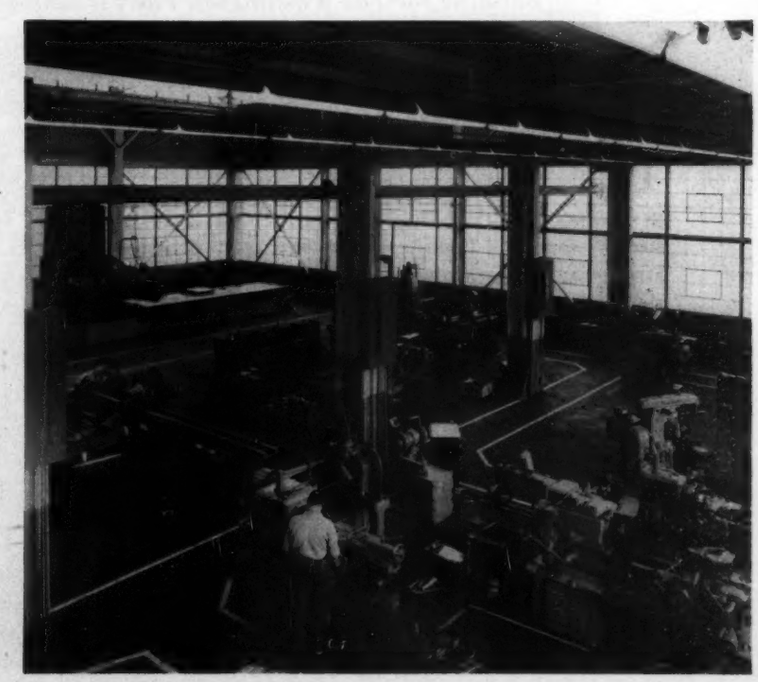
Architects

Special problem here was handling equipment, because of variety of loads and operations. A 25-ton overhead crane travels and services the building's entire 300-ft length; four power reel-type jib cranes aid the running-in of machines and small assembly work; and gantry cranes, traveling the full length of the building, interlock with overhead cranes

THIS IS a wartime building in both purpose and planning. It is really a service garage for large machine tools, where these war-important machines are repaired, rebuilt and resold. It represents the salvage operations of a machine-tool manufacturer, these operations grown to such proportions as to warrant a separate plant. Though completed only recently, it is already being enlarged.

The building also represents wartime operation in certain phases of design, for it was built when steel shapes were tight, as well as construction labor. It did manage to achieve a steel frame, but one designed for available steel rather than for logic of choice. Also it uses masonry only for the bottom of the wall where it is really necessary; above a base course the wall is all windows with spandrel sections of an asbestos material.

Guiding design principle was open, well lighted space, for here a great variety of machinery must be handled, rather than some simple line operation.





COMPLETE PLANT FOR A NEWSPAPER

Building for The Washington Post, Washington, D. C.

Albert Kahn Associated Architects and Engineers, Inc.

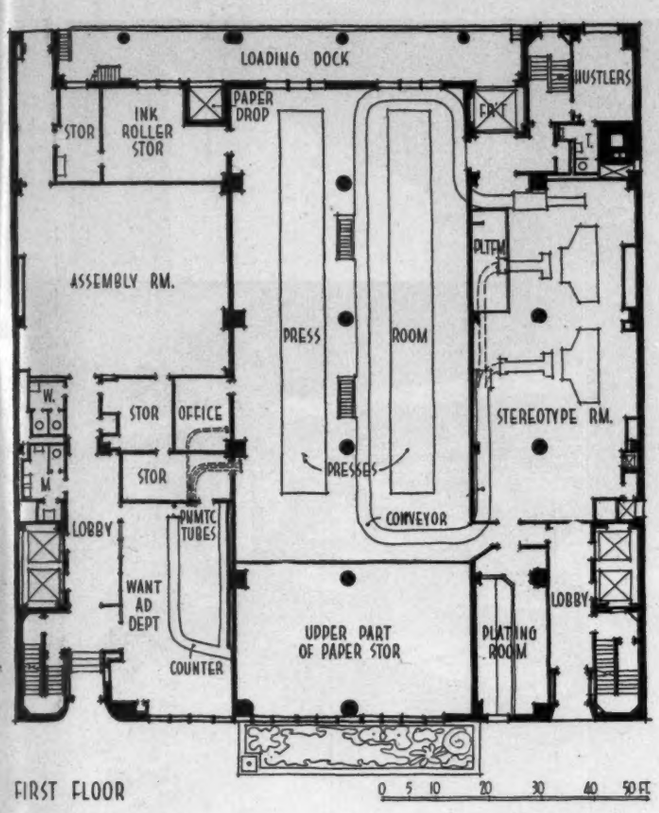
THIS NEW BUILDING reversed the problems usually met in industrial buildings of today, in that a complete newspaper plant had to be shoehorned into a downtown site, the various facilities being stacked up instead of strung out in assembly-line fashion. As a matter of fact, the program changed several times, once after contracts were let and footings poured. At any rate, with the Washington height limit, the principal problem was fitting everything into an inside plot which was none too large.

The huge presses occupy a two-story main floor, open to paper storage area in the basement. The high front windows serve the double purpose of making an interesting display of the busy presses, and permitting changes in press machinery, since the windows are made easily removable. Rear windows are similarly designed, though the need for a loading dock complicates the rear section. Foundations for the presses and their heavy motors are isolated from main building footings, to prevent the transference of press vibrations to the building frame.

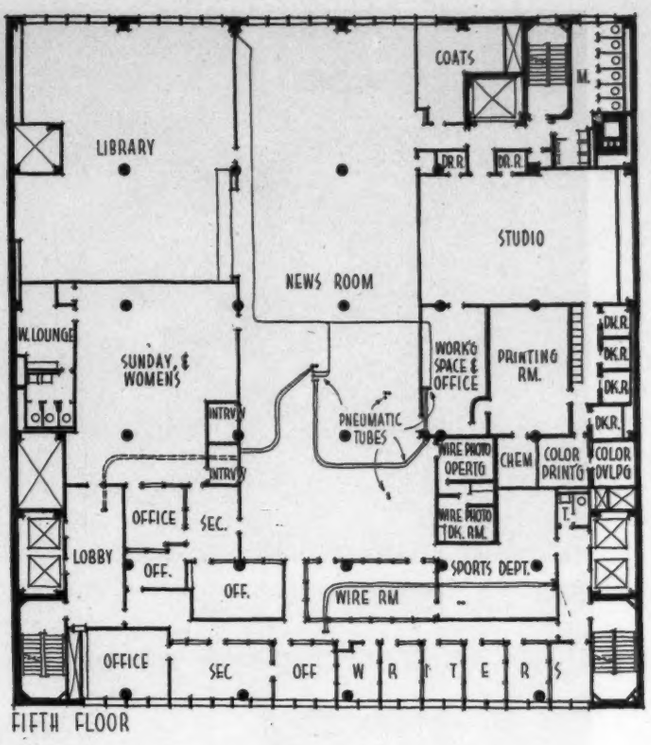
Some space was sliced out of the first floor for a want-ad office for the public, an assembly room to one side of the press room, and an employees' entrance.

Second floor, beside the press room, has space for employees' facilities — lockers and snack bar — visitors' balcony overlooking presses, and some unassigned office space for expansion. Third floor is largely occupied by the mail room; the fourth by composing and engraving departments; fifth, sixth and seventh by the offices.

Each floor is completely air conditioned, with separate zone controls for each story. A complicated system of filters is arranged to take ink vapors out of the air exhausted from the press room, some filters at the duct openings, more at the exhaust, to prevent discoloration of this and surrounding buildings.



FIRST FLOOR



FIFTH FLOOR

Building represents 100 per cent coverage of an inside lot measuring 120 by 130 ft. Lower floors are devoted to presses and other mechanical operations; upper floors to office space. View below shows main news room on fifth floor. Entire building is air conditioned

Robert C. Lautman





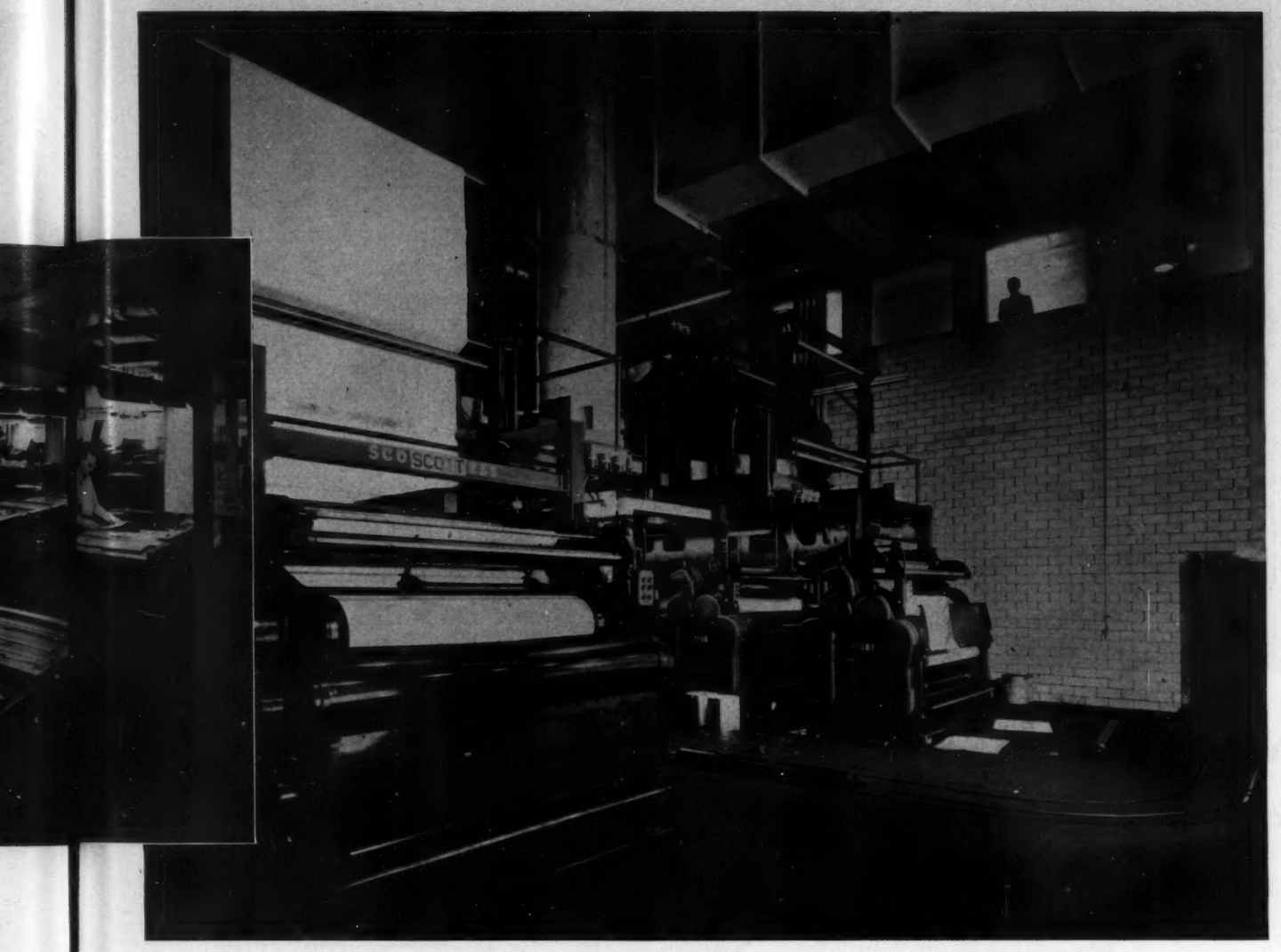


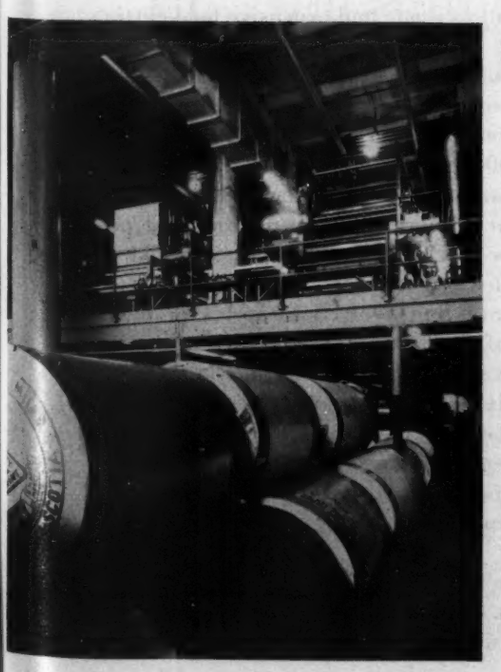


Robert C. Lautman



Upper left: want ad counter beside first floor entrance. Left center: assembly room on first floor. Above: composing room on fourth floor. Lower left: office of the chairman of the board, Mary Barnes, decorator. Opposite page, above: large presses are displayed on first floor; the public also has a viewing gallery at second-floor level. Opposite page, left: first floor opens to basement for convenient handling of 2000-lb rolls of paper. Opposite page, right: a view of the mail room occupying most of third floor









MAINTENANCE SHOP FOR DIESEL LOCOMOTIVES

For Chicago and North Western System at Chicago

De Leuw, Cather & Co., Engineers
E. C. Vandenburgh, Chief Engineer for the Railroad
A. N. Rebori, Consulting Architect

WHEN DIESEL LOCOMOTIVES first appeared, in the late Twenties, they introduced maintenance problems which finally led to the development of a new type of building. Maintenance was first handled in converted stalls in roundhouses, but these proved poor arrangements at best, and became totally inadequate as diesels grew in length. Some railroads even tried to service them outdoors, on through tracks, but outdoors is a poor place for parts cleaning, motor overhaul, battery charging and so on. About ten years ago the railroads realized that the trouble was basic, too much "steam thinking." So has developed a building functionally designed for the new types of locomotives, complete with the proper access platforms and pits, cranes, shop facilities.

This project, costing $1,800,000 equipped, also bids for attention as the first heavy construction in Chicago devised on the modular unit principle. Approximately 1,000,000 brick of the new modular size which lays up in exact 4-in. squares were used in this project. These dimensions allow coordination of such factory fabricated building components as glass block, steel sash and doors, and eliminate needless waste and expensive field cutting and trimming.

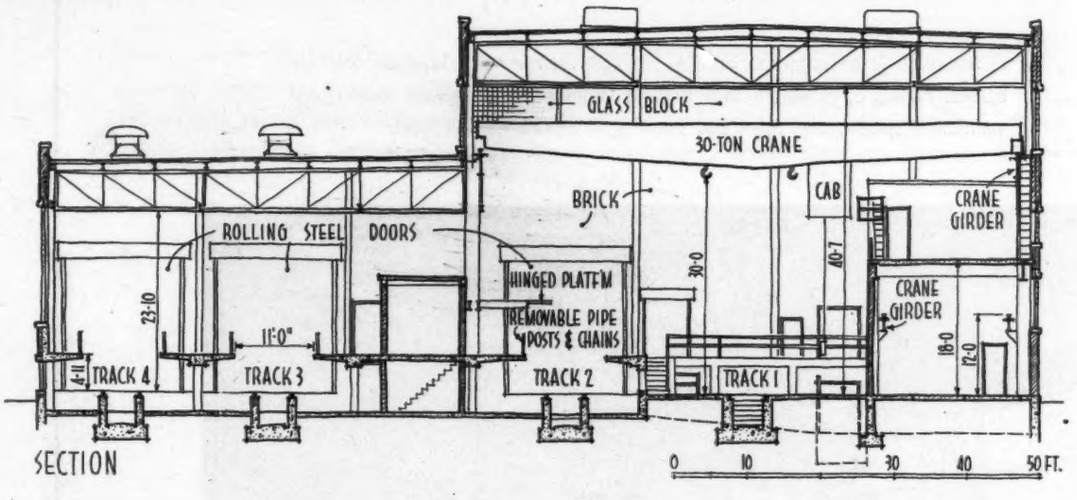
Basic construction consists of a cast concrete pile and reinforced concrete foundation, structural steel frame, precast concrete roof deck and curtain walls made up of 14,000 sq ft of glass block and 3500 sq ft of steel sash. Glass block were chosen for good distribution of daylight without glare, insulation, and permanency plus low-cost maintenance; railroads like to erect buildings, then forget them.

Heating and ventilating involved the special problems of large volumes of air changes, both because of the size of doors and the ventilation requirements. So the heating combines unit heaters with radiant floor panels, the latter for men working around the engines, the former for rapid recovery of air temperatures. Manually operated exhaust fans, set above the service tracks, take care of extra ventilation needs when an engine is operating.

Another feature is a radiant snow melting system in the outside ramps. Heating coils of wrought iron pipes are laid in gravel under the concrete slabs.



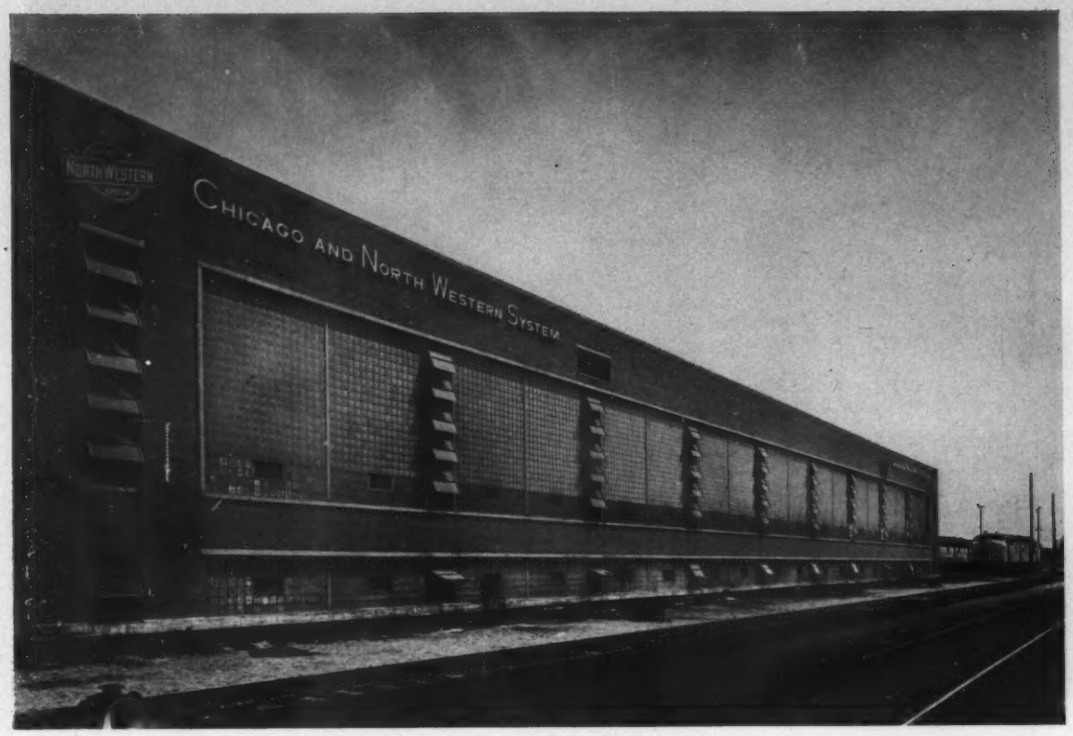
Hedrich-Blessing Studio



SECTION



Shop contains 1,928,000 cu ft; consists of two major wings. One is for service and repairs, the other for storage and auxiliary shop work. Service wing (section above) has high-bay portion for heavy repair, low-bay for fast servicing. High bay has one through track and two stub tracks, spanned by a 30-ton crane. Low bay has two through service tracks, both provided with track sections (not shown) which are lifted hydraulically to platform level for convenience of workers and for speed in handling routine servicing



Fenestration is arranged to provide daylight below track level as well as above. Panels of operable sash provide ventilation to augment mechanical ventilating system, and there are small sight panels at two levels



Hedrich-Blessing Studio

STRUCTURAL STUDY: *Jefferson Memorial Arch*

Eero Saarinen and Associates, Architects

The first in a series of articles showing the interrelationship of architecture and engineering through exposition of the engineering problems encountered by him on several prominent projects

By Fred N. Severud, Consulting Engineer

IN THESE DAYS when complete coordination between architectural and engineering thinking becomes more and more important, it may be well to review a few examples taken from daily life. By taking actual examples rather than by generalizing, it seems to me that a better understanding can be gained of how such coordination is progressing. No attempt has been made here to allocate the contributions made by the architectural and engineering fields. Obviously, the end results are always achieved by a joint venture.

Rather than enter into an elaborate analysis, an attempt will be made to bring out only the salient points so that they can stand out with greatest emphasis.

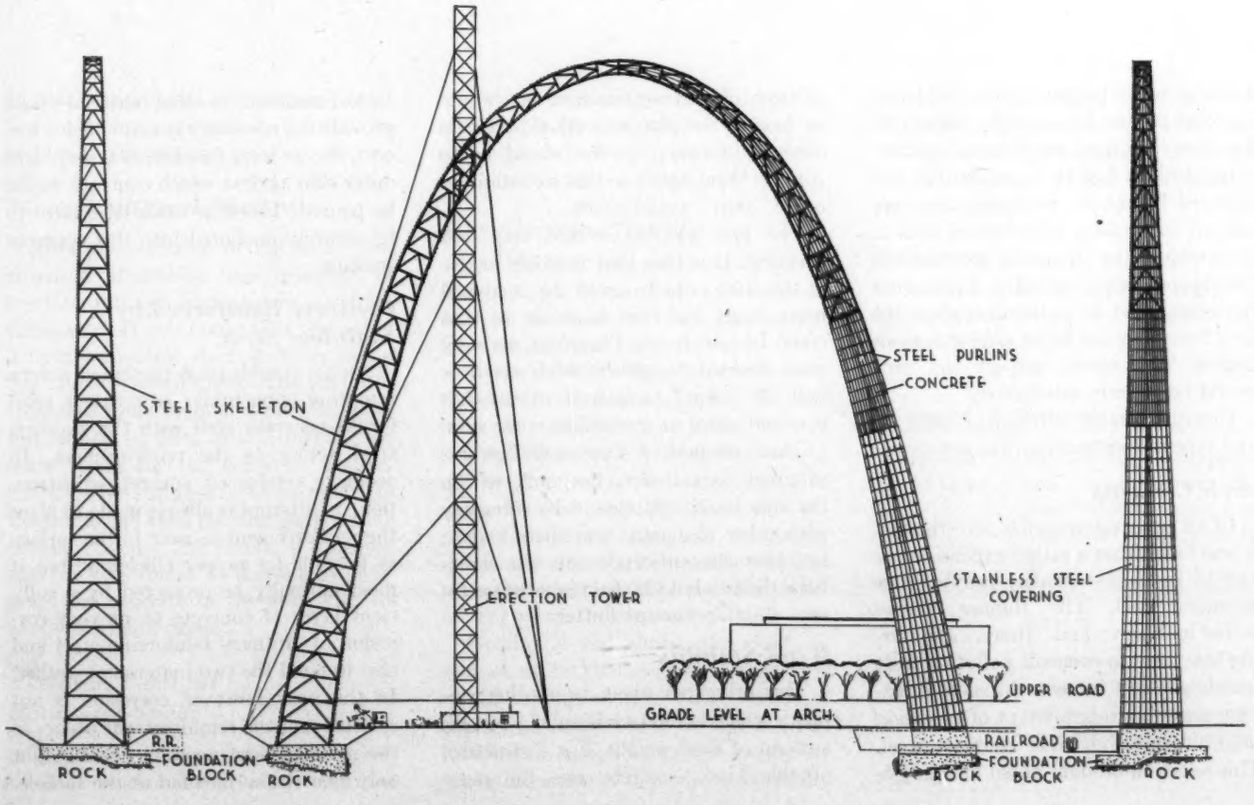
When, during the preliminaries to the competition for the Jefferson Memorial in St. Louis, Eero Saarinen told me he wanted a triangular ribbon floating in the air, he presented a fascinating engineering problem. The end result would have to be one of beauty and permanence and, inevitably, at a cost not to make the whole scheme impossible.

The architects proposed a profile for the arch with suggested span and height. From this we worked out mathematically a curve which would place the pressure line as near the center of the arch as possible and at the same time give the architects an arch that was pleasing to the eye.

We also made preliminary investigations to determine minimum sections for gravitational and aero-dynamic stability. Obviously, it would have been foolhardy to get the architects all excited about something which would later prove to be impractical.

After the architects won the competition, a more extensive study was under-

Erection diagram of the arch which won first prize for Eero Saarinen and his associates in the Jefferson Memorial competition three years ago. The structural steel skeleton would make erection convenient and serve as reinforcement, concrete gives wind stability, and stainless steel covers it and acts as surface reinforcement. When built, there would be another erection tower in a similar position





590-ft Jefferson Memorial Arch symbolizes the city of St. Louis as gateway to the West. Heavy stainless steel was chosen for the covering to insure durability and to prevent ripples which might make it look "tinny"

taken in order to gain a definite idea of the cost picture for a proper budget allowance. To do so, much more accurate computations had to be made. We also engaged Dr. D. B. Steinman as a consultant to perform wind-tunnel tests to determine if the triangular sections had the proper wind stability to prevent fluttering, and to determine what the load factors should be for wind at various angles. The model proved the arch would be entirely satisfactory.

Reasoning in the selection of materials and type of construction was as follows:

Arch Covering

Of all covering materials investigated, it was found that a rather expensive one had to be used — namely heavy gauge stainless steel. The thinner gauges would look wavy and "tinny," and during the years to come air pollution from industry might increase to such an extent that a certain amount of corrosion might occur even with stainless steel. This selection brought about an analysis of two different approaches. One would be to join the plates to allow a certain amount of play; another would be to connect them rigidly so that a continuous outer "skin" would result.

The first method seemed lazy and wasteful. It is true that it would create a structure which could be analyzed more easily but that is about all that could be said for it. Therefore, we very soon decided to either weld, rivet or bolt the "skin" to such an extent that it would serve as a seamless outer skin.

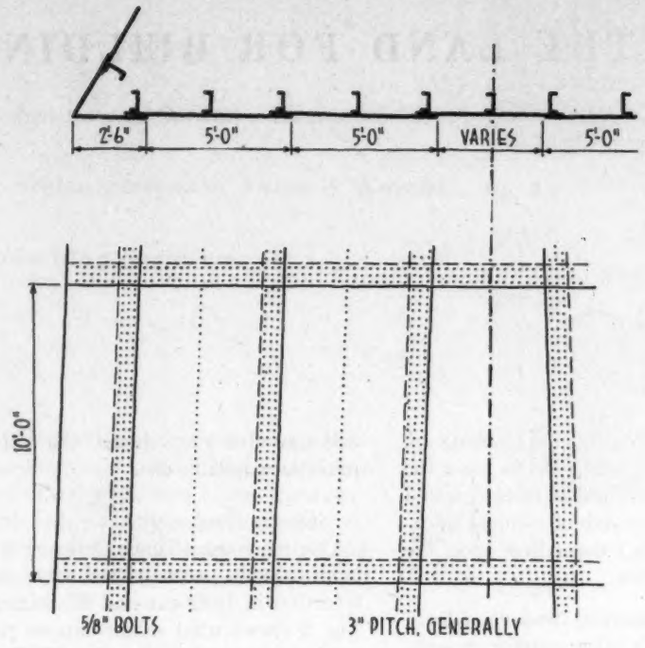
Thus, we invited stresses and strains of great magnitudes, not only within the skin itself, but also in its interplay with other elements. And there had to be other elements; not only for structural rigidity but also to create the necessary stability against flutter.

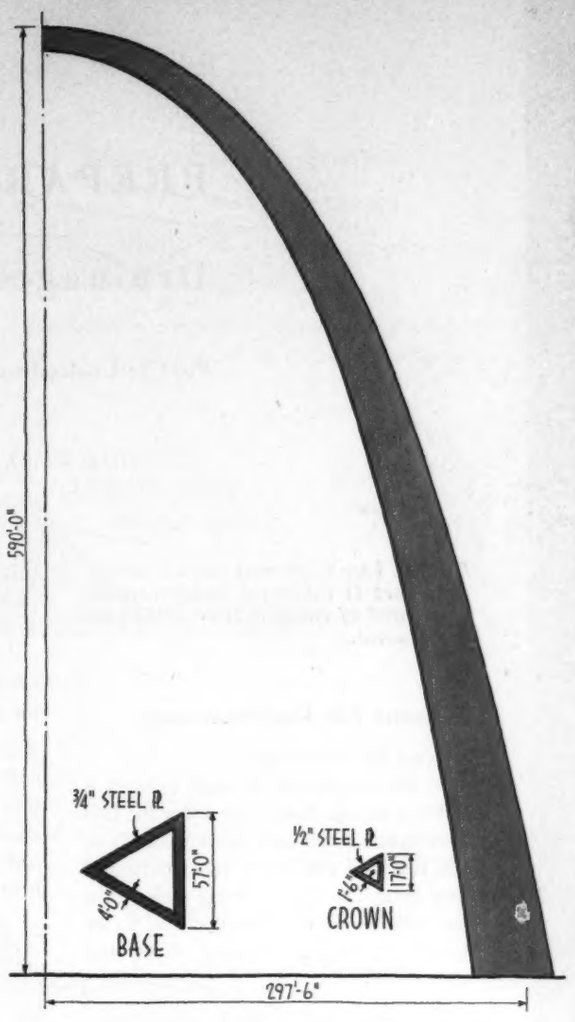
Wind Stability

This brings us, then, to another element, which is the provision of a certain amount of dead weight. For a structure of this kind, concrete was the most logical medium. No other material would provide the necessary mass at such a low cost. So, we were faced with a very rigid outer skin against which concrete would be poured. The skin would also have to be securely anchored into this concrete backing.

Concrete Reinforced by Stainless Steel

Such a combination presented a very tempting opportunity to create a reinforced concrete arch with the stainless steel acting as the reinforcement. In ordinary reinforced concrete construction, an attempt is always made to place the reinforcement as near to the surface as possible for proper efficiency; but it must normally be protected by a sufficient layer of concrete to prevent corrosion of ordinary reinforcing steel and also to bond the two materials together. In this case, however, corrosion is not a factor and the reinforcement occurs in the most efficient position possible, not only near the surface but at the surface.





Basic dimensions of the arch are shown at right. Note what heavy stainless steel covering would be required. Thickness of the concrete is indicated on the small sections. Stainless steel would be bolted together and to the structural steel frame according to the scheme above

In this position, its effectiveness is at the optimum — provided it can be bonded to the concrete.

Structural Steel Skeleton

After the selection of the basic construction materials, the question of erection was, of course, very carefully considered. It was found that the use of a light structural steel skeleton would have many advantages. The stainless steel skin could be hung from the skeleton, which in turn, would furnish the outer forms for the concrete. By anchoring the stainless steel securely to the frame and then pouring the concrete entirely around the frame, a splendid medium was found to thoroughly integrate the concrete of the arch with its exposed reinforcement.

Skeleton Used for Bond and Shear

This skeleton would also serve as additional reinforcement where required and would help to absorb large shearing stresses. It can be likened to bent-up and hooked bars in concrete beams in combination with stirrups.

Miscellaneous Details

The physical proportions such as the dimensions at the various sections, thickness of the concrete, etc., are evident from the sketches on these pages.

Another detail might be worth mentioning. Our first thought was to butt-weld the stainless steel plates but we realized that such a procedure might not be practical for a structure of this scope. We discussed this matter with experts in various fields and we finally came to the conclusion that bolting the plates together would be the most satisfactory means of connection.

Welding would shrink the edges to such an extent that great buckling forces would be engendered. These could, of course, be resisted but we did not feel justified in complicating the picture by the introduction of those forces. Specially shaped large head bolts are to be used. Their shape has been predicated on minimizing water penetration. Obviously any traffic of water must be avoided to prevent stains.

Summary

To summarize our thinking, the tabulation below shows the elements and their functions:

Material	Function
Stainless steel skin	Weather and rust protection, non-corrosive exposed reinforcement of a reinforced concrete arch
Concrete	Wind stability, the main compression element of the arch
Steel skeleton	Erection convenience, offering the necessary shearing and bonding resistance after being encased in concrete

PREPARING THE LAND FOR BUILDING

Drainage

Part 2: Underdrainage

In Part I we discussed surface drainage. Part II takes up underdrainage — control of rainfall that flows into the ground.

Reasons For Underdrainage

1. Keep the Cellar Dry

If the watertable is high around a cellar, you can design the cellar for this hydrostatic force and waterproof it; or you can lead this water to a sump and then pump it out; or you can underdrain the cellar — thus removing the water source by locally drawing down the watertable.

2. Keep the Construction Economical

Another use of underdrainage systems is to aid in the economical design of retaining walls or cellar walls and floors by relieving the hydrostatic force. For example, if a floor were constructed some place where the watertable is normally 4 ft above it, there would be an uplift or buoyant force of the water equal to 4 times 62.5 lb or 250 lb per sq ft of floor area. Since concrete weighs approximately 150 lb per cu ft, we would need a slab 2 ft 10⅜ in. thick $\left(\frac{250}{150 - 62.5} = 2.86 \text{ ft}\right)$ in order to keep this floor from floating and cracking up. However, if we were able to lower the watertable below the floor level we would only need a floor slab of nominal thickness (4 to 6 in.) depending upon the usage of the cellar.

3. Increase Supporting Strength of Soil

If the water is taken away from soils, it is possible to compress the soils further than found naturally, and thus these soils will be able to hold up a greater load with less settlement.

4. Prevent Frost Heaving

The usual case of frost heaving is illustrated in Fig. 1. All soils exert varying degrees of capillary attraction (the ability of the soil to suck up water from the watertable due to the minute space between the particles). In very fine sands (silts), the water will rise very high (up to 78 in.) while in coarse sands and gravels it will rise very little. If this capillary water freezes, it will form ice lenses which exert terrific pressure on everything around, causing walls, roads, or anything in the way to heave.

The only means of protection we have against frost heaving is the insulating effect of the earth blanket, our ability to lower the watertable so that capillary rise will end up below the freezing line, and our ability to change the soil to minimize capillary rise.

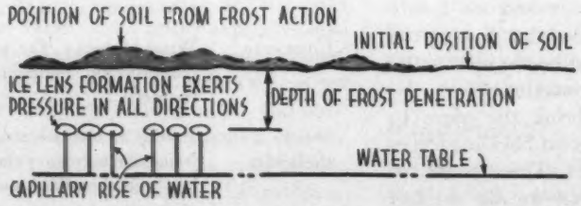


Fig. 1 *Soil heaves when capillary water freezes*

5. Stabilize Roadways

One more use of underdrainage is to help stabilize roadways and other construction in both cut and fill sections. Fig. 2 shows what might happen to a roadway in a cut section if no drainage is provided. Fig. 3 shows how this condition can be prevented. Fig. 4 shows how a slide might be caused in a fill section, while Fig. 5 shows its prevention.

6. Permit Construction in Wet Areas

This is probably the most common use of underdrainage. The remedy may entail the use of a small amount of grading and/or ditching to cause the water to run away from the construction. If conditions are worse, it might necessitate grading and ditching to some low point from which the water may be pumped out or it might even require a complete wellpoint system (described later). Where excavations must be kept dry, sheeting * and pumping may be necessary

Methods of Underdrainage

There are various ways to secure an adequate underdrainage system, depending upon the type of soil, the nature of the problem and the quantity of water that must be handled. To understand underdrainage it is essential to be acquainted with ground water conditions. The rain which infiltrates into the soil tends to flow to the nearest watercourse. The flow of water encounters varying degrees of resistance, depending upon the type soil it must go through. This causes the ground water level to be higher

** Pieces of wood or steel driven close together to keep the ground from caving in either from the force of the earth itself, or from water carrying the soil with it.*

By J. L. Staunton,

Hydraulic and Sanitary Engineer,

of Seelye Stevenson Value & Knecht,

Consulting Engineers

the farther the distance from a watercourse. Proper underdrainage aids this flow of water and thus lowers the watertable either locally or generally.

The watertable is not static but will vary depending upon amount of rainfall and type of vegetation.

1. Fill Trenches With Pervious Material

The most primitive means of underdraining a site is to dig trenches and refill them with sand, gravel or similar pervious material. The main trouble with this system is that the water in flowing to and through these trenches transports finer materials with it which usually clog the trench.

2. Place Pipe in Trenches

A much better method is to dig trenches, place pipe in them and cover them over with a suitable pervious fill. The pipe for this purpose may be porous concrete, perforated vitrified tile, perforated corrugated steel, perforated concrete, bell and spigot vitrified tile, bell and spigot concrete, vitrified skip tile joint pipe, or farm tile. Various types are shown in Fig. 6.

The porous concrete, perforated vitrified tile or concrete, and perforated corrugated steel can have their joints sealed, the others cannot. It is preferable to seal the joints where possible in order to keep the fines (smaller particles) from running in with the water as these smaller particles will tend to clog the pipe. Where joints cannot be sealed, they are protected with tar paper over the top half of the pipe at the joints or else the pipe is wrapped with burlap.

The U. S. Army Corps of Engineers made tests at their Experimental Station, Vicksburg, Tennessee, on the ability of fines to wash into the various types of pipe. Their conclusions were that the least amount washed into porous concrete. Next came perforated pipe, open

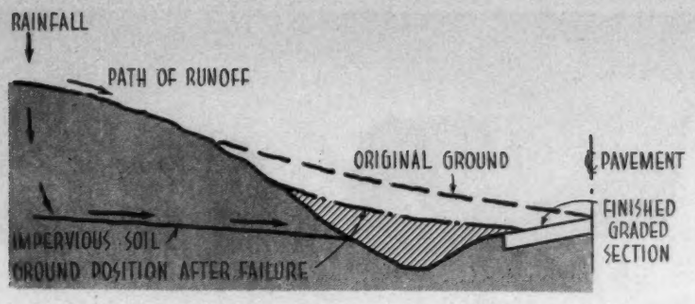


Fig. 2 *When a cut section is inadequately drained, pressure of groundwater pushes the soil out. Cross-hatching indicates moved soil*

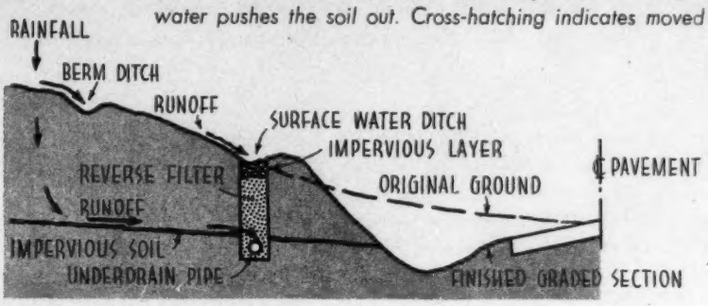


Fig. 3 *Proper drainage at a cut section*

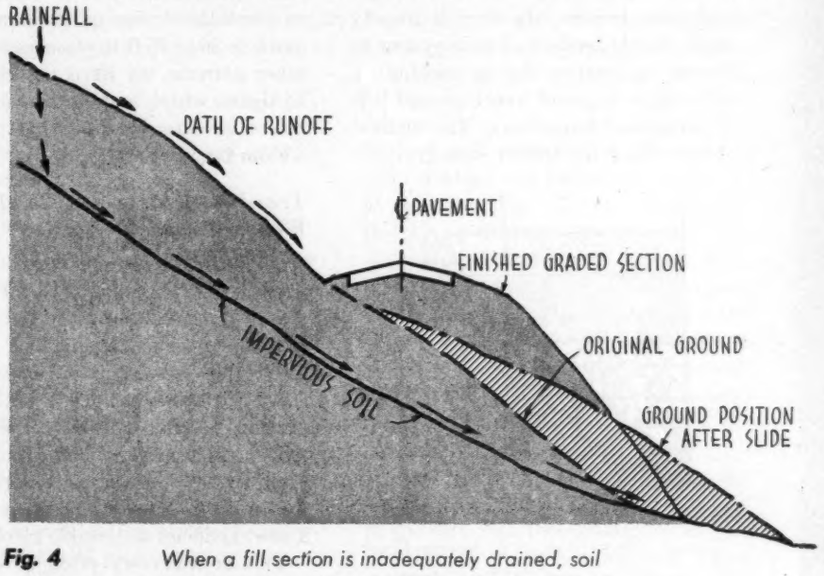


Fig. 4 *When a fill section is inadequately drained, soil is pushed to position indicated by cross-hatching*

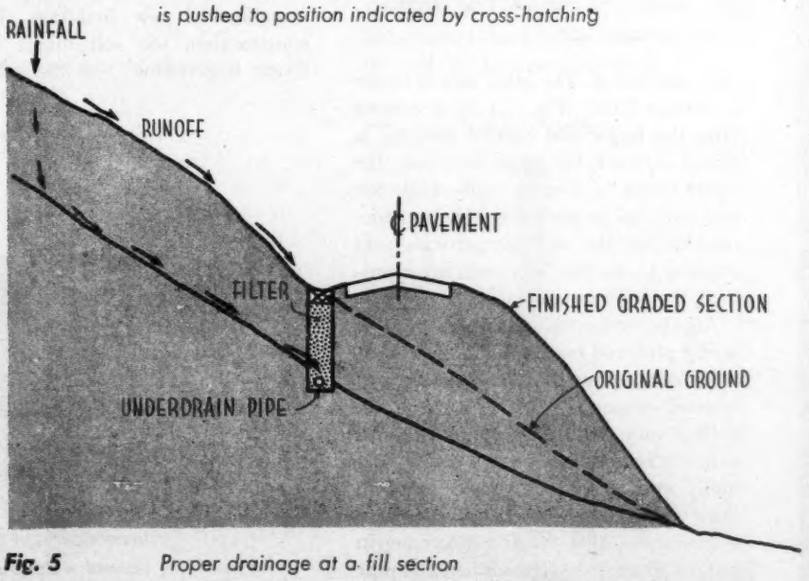


Fig. 5 *Proper drainage at a fill section*

Photos courtesy Armco and Robinson Clay Products Co.

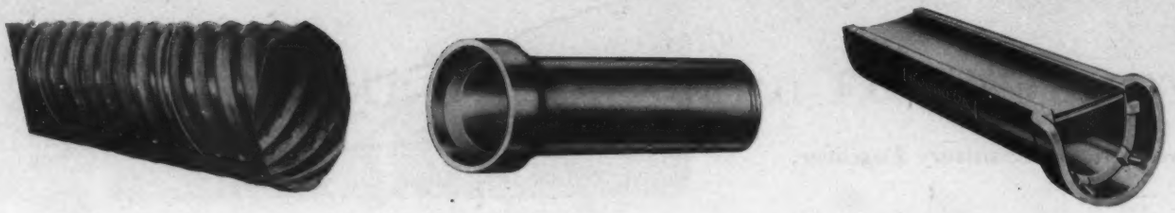


Fig. 6 *Some of the types of pipe used for underdrainage. Left to right: perforated corrugated steel, porous clay, skip-joint clay. Perforated concrete is not shown, but is discussed in the text below*

joint bell and spigot, and skip joint in that order. Farm tile was not tested but I believe that it would rank below skip joint. Fewer fines washed into perforated pipe when perforations were placed down.

Preventing Pipe from Clogging

In designing an underdrainage piping system, the quantity of water is seldom important because the flow is usually small, but the tendency for the system to become inoperative due to choking up of the pipe or gravel trench around it is of paramount importance. The method of backfilling the trench with gravel is

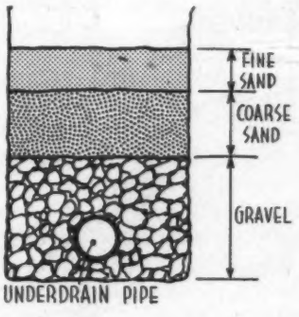


Fig. 7
Correct construction of a reverse filter to prevent fine material from clogging the drainage pipe

very important. The ideal way is to use a reverse filter. (Fig. 7.) In a reverse filter the larger and coarser material is placed around the pipe to allow the water to get to it more easily while the fine material is placed on the outside, thus keeping the very fine particles from washing in. In this way each layer protects the layer outside of it.

Another important reason for care in laying pipe and backfilling is to prevent soils from "piping." This "piping" or internal erosion is caused by the water pulling very small particles of soil with it in its travel through the soil. Eventually enough soil is carried away to cause a settlement failure over the pipe. Occasionally this condition occurs in surface drainage systems when the pipe is poorly jointed and the fine material gets washed into these joints.

Spacing of Underdrains

The type of soil determines to a great extent the spacing of underdrains. At one extreme we have pervious soils such as gravels and sands which will permit a relatively free flow of water, allowing us to place the drains quite far apart, as much as 50 to 75 ft in some cases. At the other extreme we have the clays and hardpans where underdrains should be placed so close together that their use seldom becomes practical.

Troubles Due to Artificial Watertables

Quite frequently we come across a perched watertable. (Fig. 8.) This condition can occur naturally but is more commonly man made. The normal watertable in such a case is relatively deep. Somewhere above is a tight impervious layer, usually clay. The rainfall that filters into the ground gets dammed up in its flow toward the watertable by this impervious layer, and fairly quickly a new, artificial watertable results.

This is seen very often in the construction of new buildings. Prior to construction, the soil might be relatively impervious, and the water that falls runs off or remains above grade. The small amount of the remainder that is not taken up by plant life flows slowly through the soil to the watertable.

As the structure is built, space between the structure and the original ground is backfilled. It is backfilled either with the same material or a more pervious material. In any case, this backfill is no longer as dense as it was originally. Therefore, more water will now flow below grade at each rainfall. If the soil below is too tight to carry this water away quickly we will have a perched watertable and possibly a wet cellar.

Suppose one attempted to drain this same structure by using drywells (drainage structures designed to be used when top of ground is relatively impervious and ground below is porous. See Part I). This wouldn't work because all the rainfall would be added to the soil that originally was just barely caring for its small amount of infiltration.

Troubles due to a perched watertable might be solved by the usual underdrainage methods, or the perched watertable might be drained by digging holes vertically through it to the natural watertable. These holes can then be filled with sand, gravel or some pervious material, and the trouble will be relieved

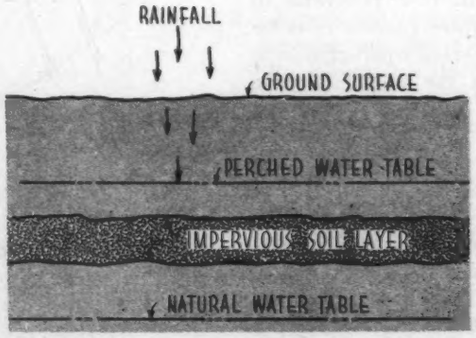


Fig. 8
Impervious soil prevents water absorbed by ground from reaching the natural watertable, so an artificial or "perched" watertable is formed



Drawing and photo courtesy Moretrench Corp.

Fig. 10

When normally wet ground must be kept dry, as in building foundations or piers (photo above) wellpoints (sketch, left) are driven into the ground and connected to a pump

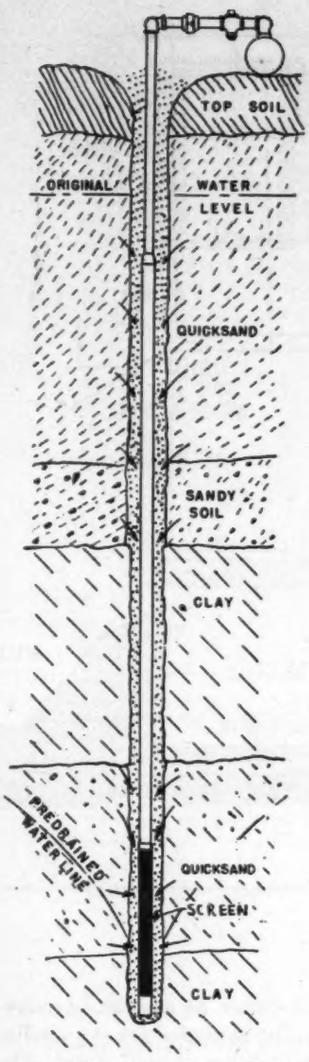


Fig. 9

unless the holes become choked up with fines washing in.

Pumping Water Out

Wellpoints are frequently used for dewatering foundations and when the problem of handling water is very difficult. A wellpoint (Figs. 9, 10) is merely a length of pipe which has a fine well screen on its lower portion. These wellpoints are driven in the ground adjacent to the excavation. Their tops are all connected to a manifold leading to a pump. The spacing, size and depth of points, as well as the pump characteristics, differ with each problem.

Sandpiles

Another recent development in the field of soil stabilization (to keep it from sinking) and underdrainage is that of sandpiles (Fig. 11). It is almost impossible to draw water down in a very dense soil such as a clay. In fact, some of this water becomes practically a part of the clay itself. Fortunately since the clay is so dense, the actual volume of water that must be cared for is exceedingly small. Now suppose some vertical holes filled with sand are placed in the clay. Nothing will happen. However, if we place a weight on top of the clay we can squeeze some of the water out of the clay into these sandpiles and we will then have a more stable soil. These sandpiles provide an easy access for the water which must be squeezed out before the soil can become stabilized.

Wet soils, particularly clays, which sink when the load of structures on top of the ground or even the ground itself squeezes out water below, may be stabilized by forcing the water into sand-filled holes, as illustrated at right. The photo is of equipment used for this process at La Guardia Airfield

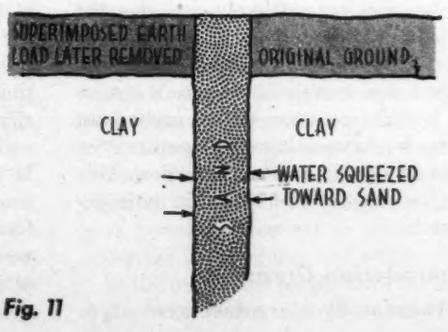


Fig. 11

Photo courtesy Engineering News-Record

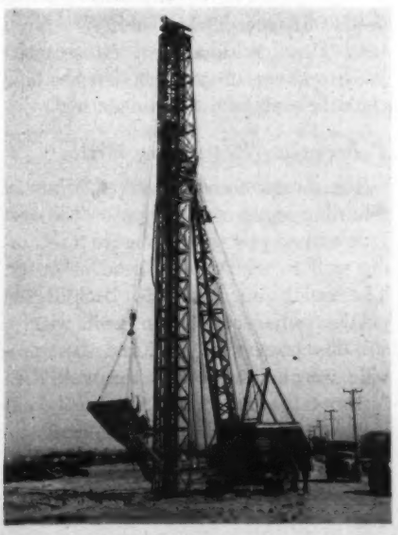


Fig. 12

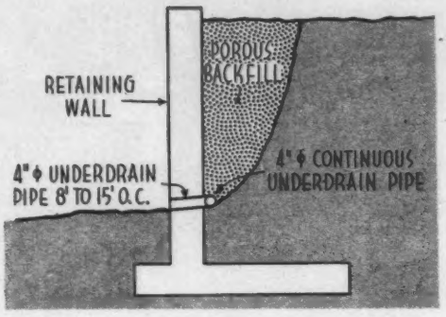


Fig. 13

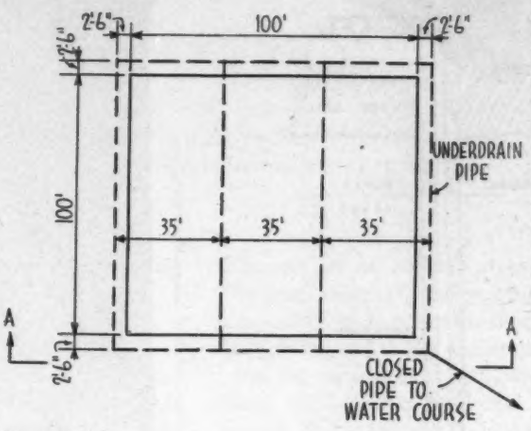


Fig. 14

Instead of designing concrete structures to withstand excessive hydrostatic pressures — which would be prohibitive — underdrains are laid to relieve these pressures. Typical examples are shown in the drawing above, which is a recommended method of protecting a retaining wall, and in the drawings right, which illustrate how the water table was lowered 5 ft to permit a more economical basement construction

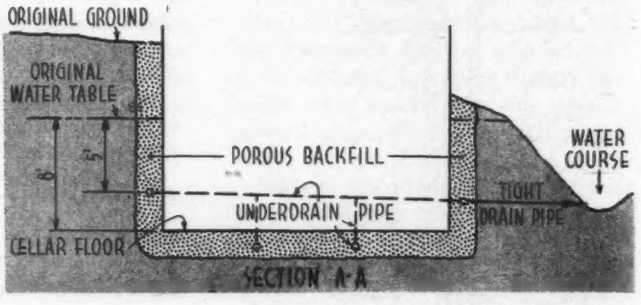


Fig. 15

There have been various methods devised for constructing sandpiles. The most common is to drive a mandrel (a piece of pipe) to the desired depth. The interior of this mandrel is then excavated and backfilled with sand and then the mandrel is removed.

Fig. 12 shows the equipment that was used at La Guardia Airfield in New York City. The airfield has been settling quite badly and consultants felt that the field could be stabilized by this method.

Protecting Retaining Walls

The most common cause of failure of retaining walls is inadequate drainage. It is seldom practical to design a retaining wall to withstand a head of water. The usual practice is to backfill the portion adjacent to the wall with a suitably porous material and then provide weepholes through the wall. Unfortunately these holes frequently get choked up and all the water dams up behind the wall resulting in forces that the wall was not designed to withstand. Fig. 13 shows a more desirable drainage system for retaining walls. Here the piping system gives much more positive drainage and, if properly installed, should never clog up.

Good drainage practice generally requires pipes to be laid on a slope in the direction of flow. This is done to secure sufficiently high velocities in the pipe so that any solid matter carried by the water does not settle out and clog the pipe. In underdrainage, this slope is not very important as the filter around the pipe keeps undesirable materials out, so it is quite common to lay underdrain pipes level. Sometimes the pipes are even laid on a grade counter to the flow. This occurs at times in foundation drain design.

Foundation Drains

Occasionally a condition arises where the cellar cannot be completely underdrained. For example, assume a cellar to be 8 ft below ground water. The ground water might be drawn down 5 ft relatively easily, but it might be very expensive to lower the watertable the other 3 ft because of all the additional drainage and excavation required. After analyzing the conditions it would probably be more economical to lower the groundwater 5 ft and design the floor for 3 ft of uplift or, technically, hydrostatic pressure.

Suppose this cellar were 100 by 100 ft and an analysis of the soil revealed that one drain pipe and filter would be effective for only a distance of 20 ft in each direction perpendicular to the pipe. If the underdrain were placed in the usual way (around the periphery of the foundation wall) the center of the slab would be subject to the full uplift pressure of 8 ft. This can be obviated as shown in Figs. 14 and 15.

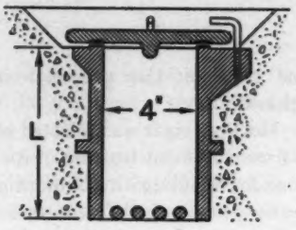


Fig. 16

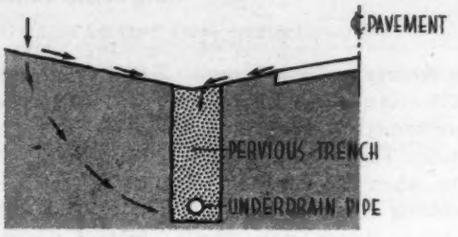


Fig. 18

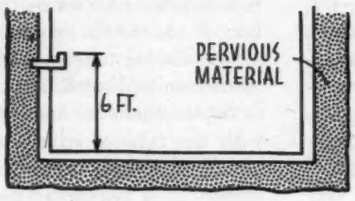


Fig. 17

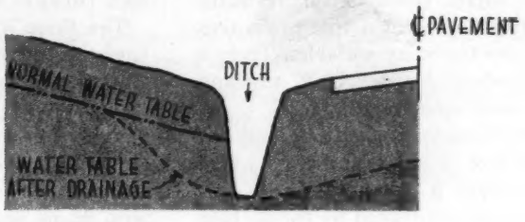


Fig. 19

Sometimes for economy structures are designed to let the water come in through relief valves (top) or as added insurance to admit water after it reaches a certain level (lower drawing)

Drainage systems above are rather special. The combined drain (top) is designed for both surface and underdrainage, but does not work too well in practice. The bottom sketch shows how railroads lower the watertable along the track bed

Let the Water In

Occasionally it is more economical to let water come into an hydraulic structure than to install an elaborate drainage system or to provide for the uplift in the design. This can be accomplished by use of relief valves as shown in Fig. 16. When the structure is empty the ground water flows in but when the sewage flows into the tank the weight of the liquid closes the valves.

Sometimes, as an additional precaution it is a good idea to provide overflows to permit water to flow into the structure in case the groundwater exceeds a certain elevation. This can be done by various methods, one of which is shown in Fig. 17.

Site Development Problems

Very often during development of a site, springs, creeks and dry stream beds get filled in. It is usually good practice to provide an adequate underdrainage system at these locations or else resistance has been added to the natural flow which will raise the watertable by backing up the water. Someone might say that they can understand this about springs or creeks but why dry stream beds? Before the land was filled in, the water tended to run through this bed and the water flowing into the soil will still tend to concentrate in this bed due to the nature of the original soil.

Sometimes improper provision of an underdrainage system can cause serious trouble. A building might be constructed at a time when the groundwater level was 5 ft above the cellar level. A few years later another structure might be built adjacent to the first one. In the course of construction of the second building the watertable might be lowered, permitting the soil to consolidate under the first building and settle.

In the past, some people have devised a combined drain (Fig. 18), that is, a drain that acts as both a surface drain and underdrain at the same time. This combined drain has been all right theoretically but has not always worked out too well in practice. The trouble is that surface drainage handles large quantities of water. When this water flows, it usually carries other particles with it which eventually will clog the filter. Also the large amount of water, in flowing through the filter, frequently upsets the filter and carries the fines into the pipe and eventually clogs it. However, these combined drains have worked out satisfactorily in special cases where the flow of surface water is very small.

Railroad Track Beds

Railroads occasionally make use of a surface drain to lower the watertable when going through swampy land. Fig. 19 shows how this works. The deep cut facilitates the flow of water and thus locally causes the groundwater to drop.

CALIFORNIA ARCHITECTS STUDY SCHOOL COSTS

Review of a report prepared by the Education and Research Committee, California Council of Architects

SCHOOL ARCHITECTS are deeply concerned with costs, as evidenced by recent ARCHITECTURAL RECORD Building Types Studies. They find them quite perplexing, too, when they must talk to the school building committee in comparing a proposed design with other schools. Generally we see cost figures expressed in terms of dollars per sq ft, per cu ft, per classroom, per pupil, or per 30 pupils. When used individually, they hardly present a true evaluation. There are too many variables. There is no standard for weighing teaching, service and utility areas.

When taken in combination, these cost figures give a reasonable picture, but fail to make it complete. These costs have not been adjusted by two factors: (1) how well the school functions and (2) amenities the architect has been able to provide through ingenious design.

The alert architect will wisely point to how well his school meets essential design requirements as well as to low cost figures. For instance, is the school expansible, are classrooms properly grouped, is access to all rooms as direct as possible, can the teacher conveniently control all sections of the classroom?

A serious effort to put costs on a rational basis has been made in a study by the Education and Research Committee of the California Council of Architects. They used cost per sq ft as their unit of measurement in investigating 143 schools. However, they threw out some variables that might distort the cost picture, and developed a "yardstick" to serve as a basis for comparison.

The Council listed 16 items in the yardstick common to all schools in three arbitrary design classifications — maximum, medium, and minimum. These 16 items include character of the site; number and kinds of rooms; type of corridor; materials for foundation, structural frame and roof; mechanical and electrical equipment; acoustics. And although the yardstick doesn't include design functions, it still represents an advance in our thinking.

Costs of utilities, on-site and off-site developments were excluded because they vary so much with geographical and site conditions. Their aim was to establish one basis for measuring school construction costs and to separate, as far as possible, the variables just mentioned.

Cost per sq ft was selected as the unit of measurement because of its universal use for buildings in California and because the Council felt it was more significant for analysis than other units.

Reasons the Council gave in their report for excluding other bases were: (1) *cubic contents* of buildings vary greatly due to ceiling heights, foundation depths, roof forms; (2) any number of *classrooms* or *pupils* will have accompanying toilets, storage, administrative units, health units, and feeding facilities, the size and scope varying with the type of educational program offered and the community services needed in a particular district; (3) it would be unfair to use a *classroom* unit cost for a school being developed in several stages if less than the total number of classrooms to be served by the general service rooms are included in the cost analysis.

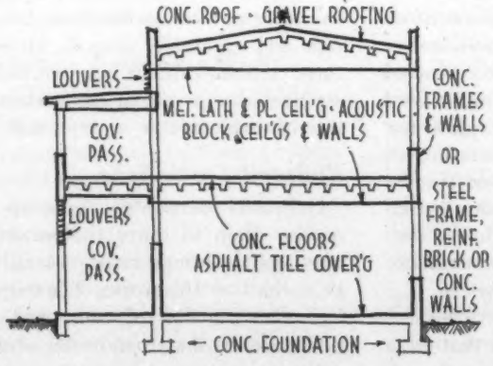
The construction contract cost, as determined by the lowest competitive bid submitted and awarded, was used for cost comparison.

1. The Council placed schools in three design classifications

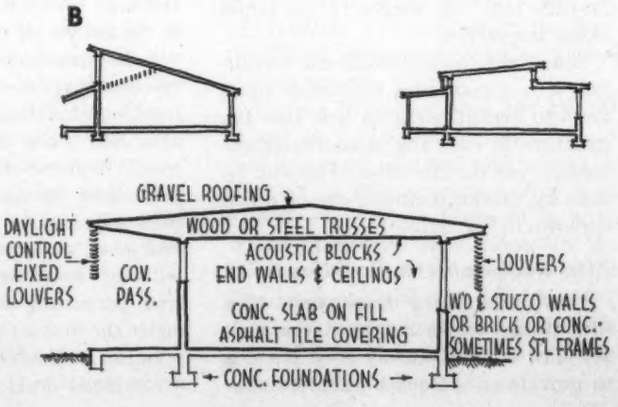
A—*Maximum Design. Generally two stories with gymnasium, auditorium, cafeteria and library. Classrooms are generally 900 to 1000 sq ft. Maintenance cost is low. Central heating is normally used with panel heating or some other form of radiation. Construction is fire-resistive*

B—*Medium Design. One story. Meets all necessary educational requirements. Classrooms are standard size (900–1000 sq ft). This type requires ordinary maintenance. Heating systems are gas fired forced air units or radiant panels. Moderately fire-resistive. Variations in roof shape change cost little. Has complete casework*

A



B



2. They established a yardstick of construction features common to all schools to promote equitable cost comparison

These cost studies were made at the request of the chairman of the education committee of the California assembly. In their letter of submittal, the Council expressed the feeling that a "yardstick" was needed, particularly because in analyzing the expenditure of state funds to aid distressed districts, one school was frequently compared unjustly with another.

Development of the basis for cost comparison was one of two sections of the Council's report. The other section deals with governing agencies influencing school design, building codes, construction materials and architectural services.

The 143 schools reported in the Council's survey were designed by 34 architects and were located in 88 different school districts and in 24 of 58 counties in California.

Next month ARCHITECTURAL RECORD will present some recent cost studies made by Walter Bogner, Professor of Architecture, Graduate School of Design, Harvard University and member of the firm of Bogner and Richmond, Cambridge, Mass.

SCHOOL YARDSTICK (ABRIDGED)

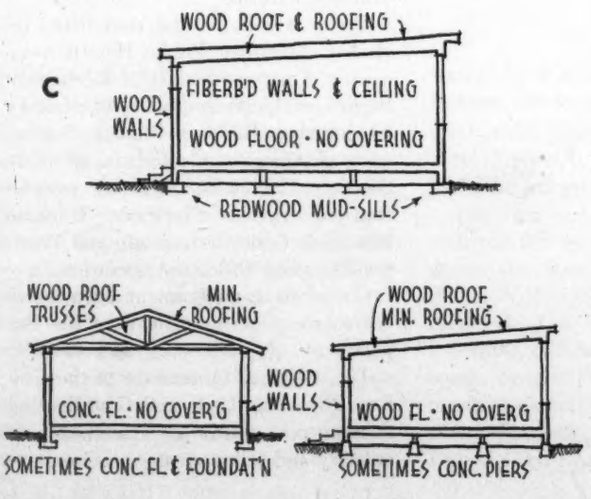
1. **Character of Site** — If level, so state. If unusual features are present, identify them: sloping, swampy, irregular.
2. **Facilities Constructed** — Number and kind of rooms. For example: 6 classrooms at 960 sq ft each, multi-use, administration, 2 toilets.
3. **Foundations** — Concrete, mudsills.
4. **Framing** — Material used for frame. For example: wood, steel, concrete; frame bents or combination.
5. **Exterior** — Redwood siding, stucco, masonry.
6. **Interior** — Metal-lath and plaster, gypsum-board and plaster, paint on masonry, plywood, tile wainscots.
7. **Floor** — Concrete slab and asphalt tile, wood joists and asphalt tile, wood joists and hardwood.
8. **Roof** — Flat (composition), flat (composition and gravel), gable (asphalt shingles).
9. **Corridor** — Single or double-loaded, open or enclosed.
10. **Heating** — Central or local, radiant floor-panel, radiant ceiling panel, unvented console, vented circulating room heaters.
11. **Artificial Lighting** — Incandescent (indirect), fluorescent (unshielded).
12. **Acoustics** — Perforated-tile in classroom, administration, multi-use rooms.
13. **Electrical Devices** — Program clocks, inter-com. equipment.
14. **Fixed Equipment** — Full or partial casework in classrooms, in-wall tables, etc.
15. **Plumbing** — Other than toilets: sink and drinking fountain in each classroom.
16. **Daylight Control** — Fixed louvers, venetian blinds, window shades.

Cost per sq ft is determined by dividing Building Construction Cost (A) by Computed Area (B) as defined below:

A. Building Construction Cost. Construction cost exclusive of architects fees, inspection, tests, utilities (septic tanks, water systems), on-site development (paving, sprinkling systems), and off-site development (streets, curbs).

B. Computed Area. Totally enclosed spaces count full area; covered unenclosed area (excluding eaves) count one-half area. All measurements are made from the exterior rough wall lines.

C—*Minimum Design. One story. Provides for only minimum educational requirements. Classrooms are sometimes smaller than standard (650–960 sq ft). No acoustic treatment. Minimum ventilation. Usually gas radiators. No daylight control. Minimum or partial cabinets. Least fire-resistive. Requires excessive maintenance*



3. They analyzed costs of 143 schools on a square foot basis

AVERAGE COST PER SQ FT FROM 1945 THROUGH 1950

Period when constructed	GROUP A Maximum Design		GROUP B Medium Design		GROUP C Minimum Design	
	No. of Schls.	Av. Cost per Sq Ft	No. of Schls.	Av. Cost per Sq Ft	No. of Schls.	Av. Cost per Sq Ft
1945 & 1946	none		6	$ 7.40	none	
1947	none		8	$10.03	none	
1948	2	$16.94	33	$11.50	2	$9.05
1949	7	$15.90	42	$10.35	none	
1950	7	$14.67	32	$11.81	4	$7.85

The table shows that most schools were built in the medium classification due to rising costs and the fact that maintenance in minimum schools is high

TECHNICAL NEWS

NATIONAL PLUMBING CODE ISSUED

Report of Coordinating Committee Stresses Unification

RECENT EVENTS indicate some bold steps taken toward building code modernization. Last month, in ARCHITECTURAL RECORD, Commissioner Lescaze reported progress and objectives of the New York State Building Code Commission in formulating a performance type code. Just announced by the Department of Commerce and the HHFA is the publication of a *National Plumbing Code*, representing the unification of a number of national organizations concerned with the development and administration of plumbing codes.

There have been various authoritative plumbing codes, but here, for the first time, is one which seeks to embody all the essential points, agreement often being reached on the basis of recent comprehensive laboratory and field tests.

This publication,* "Report of the Coordinating Committee for a National Plumbing Code" is designed to serve as a foundation upon which municipalities may rely in preparing and revising their codes.

The coordinating committee realizes however, that the code is not a static one, but may require revision from time to time as more factual data become available.

It has been estimated that a house which would now require 700 lb of cast iron pipe would take only 200 lb under the new code, while 75 lb of lead would drop to 50 lb.

Code Acceptance

NPA reports that over 200 cities have recommended using the code and that many government agencies are strongly in favor of it.

Several member groups of the coordinating committee have adopted the code. One of them, the National Association of Master Plumbers, accepted it as their basic code in May at the national convention, and they will recommend the code to those localities which have no code or wish to incorporate revisions.

Basis For The Code

The national plumbing code is based on the experience of committee members and on research at the National Bureau of Standards, University of Iowa, University of Illinois, Purdue University, U. S. Public Health Service and other laboratories. Much of the research was sponsored by HHFA. Following HHFA's publication of the *Uniform Plumbing Code for Housing* three years ago (see ARCHITECTURAL RECORD, May 1948), field correlation tests were performed to determine how well plumbing designs used in the laboratory worked out in practice. The Uniform Code was based on tests by the Bureau of Standards in which plastic pipe was used so that the action of various designs could be observed and photographed.

It was pointed out at that time that adoption of the recommendations of this code could result in simplified, uniform installations; standard designs and fittings; economy in use of pipe; and better sanitary safety.

Field correlation tests were conducted on the following: capacity of stacks, horizontal branches and building drains; circuit loop venting; pipe sizing of water supply; noise in water supply; self-siphonage of plumbing fixtures; wet venting; small piping of low flow rate drainage fixtures.

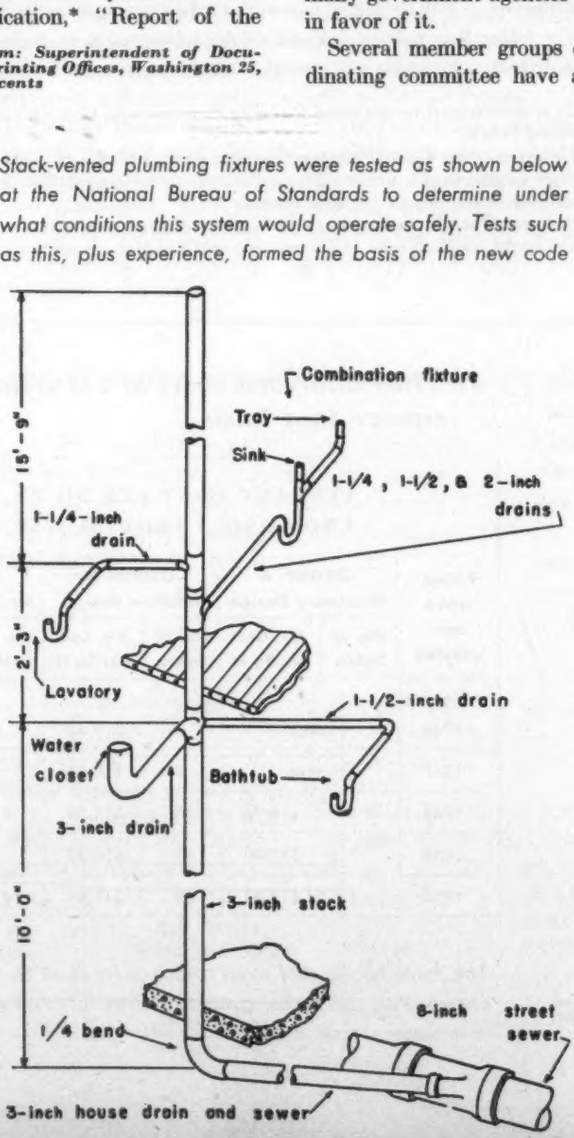
Organizations on the committee included: American Public Health Association, American Society of Mechanical Engineers, American Society of Sanitary Engineering, Building Officials Conference of America, Conference of State Sanitary Engineers, National Association of Master Plumbers, Uniform Plumbing Code Committee, and Western Plumbing Officials Association.

Cooperating government agencies in development of the code were the Department of Commerce and HHFA.

The Advisory Committee to the Uniform Plumbing Code and Coordinating Committees included members of military and government agencies.

**Available from: Superintendent of Documents, U. S. Printing Offices, Washington 25, D. C. Price, 50 cents*

Stack-vented plumbing fixtures were tested as shown below at the National Bureau of Standards to determine under what conditions this system would operate safely. Tests such as this, plus experience, formed the basis of the new code



PRODUCTS for Better Building





Newly remodeled president's office and Board room of The Upson Co. utilize wall boards in great variety of ways to demonstrate product

Remodeled Offices Demonstrate Uses of Fibre Board Panels

The main offices of the Upson Company of Lockport, New York, manufacturers of fibre board panels for dry-built full-wall construction, have been recently remodeled to provide demonstration offices for showing actual installations and applications of Upson products, especially their large-size panels. The program also aimed to create more offices and utilize waste space.

Office rearrangement in the triangular building was planned by Walter Dorwin Teague, and is based on a series of concentric circles radiating from the apex. These form major walls of the president's office, reception lounge and Board of Directors' room. The solution also includes 14 offices and a conference room-library in space previously occupied by 9 offices and a Directors' room. Other portions of the building will be modernized in subsequent phases.

Most of the walls and ceilings were finished with *Upson Strong-Bilt* "giant size" panels, 8 ft wide by 18 ft long, to eliminate unnecessary joints. The panels are 6-ply, about ⅜ in. thick, laminated for strength and waterproofed. They are also said to be rigid, crack-proof, and to have high insulation value. The pebbled surface is pre-sized for painting. *Upson No. 2 Floating Fasteners*, nailed to furring, anchor the panels from behind and eliminate visible nail holes. Other Upson items used include smaller panels, 4 ft wide and available in lengths up to 16 ft, used for paneling, 12-in. tiles for two ceilings, and several experimental products.

To show their versatility, the panels were also used for radiator enclosures, window valances, sliding wall panels, cabinet doors, lighting troughs and mountings for maps. Most of the walls were painted, but some were laminated with rift oak veneer, others wallpapered. The Upson Company, Lockport, New York.

(*Continued on page 178*)

Built-In Gas Range

The *Western-Holly Built-In Gas Range Units*, designed for installation in standard kitchen cabinets, are available with separate cook-tops and ovens for placement to suit individual preferences. Several finishes are currently available: stainless steel, white, pastel yellow, green or blue porcelain enamel. They may be used with natural, manufactured or butane gas.

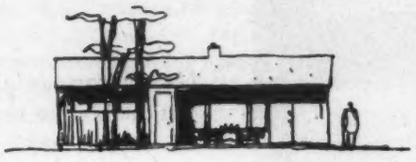
The cook-top unit drops into the top of a base cabinet. It has four gas burners in a line which, together with controls, are assembled in a panel slightly raised above the work surface of the cabinet. Burners are equipped with solid steel top-burner elements to distribute heat evenly, prevent scorching and protect pans and burners from spillovers.

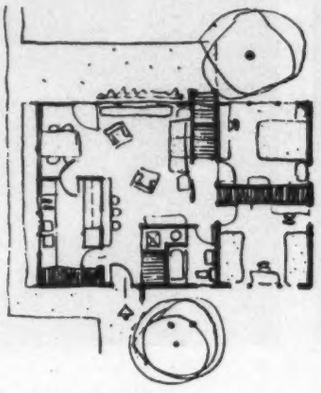
The oven and broiler unit sets into a wall cabinet at any convenient height above the floor. It is 18 in. wide at the door, 19½ in. wide inside with racks removed. The unit is insulated with Fiberglas, and surrounded with dead-air space. Special fittings include an automatic clock and a timer signal. Western Stove Company, Inc., 8536 Hays St., Culver City, Calif.

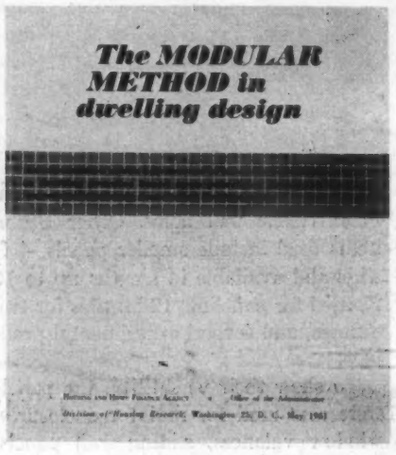


Gas range has separate cook-top (left center) and oven (right), colored finishes

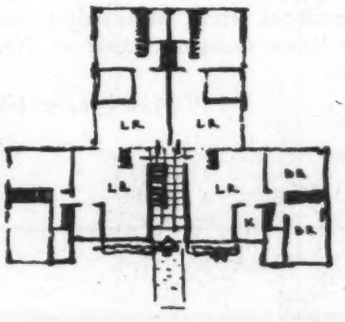
LITERATURE FOR THE OFFICE







New manual (left) gives simplified explanation of Modular Coordination System for drafting room use. Modular plans are developed from preliminary sketches for wood house (above) and masonry apartment house (below)





Modular Coordination

The Modular Method in Dwelling Design. This attractively prepared manual, the second on the Modular System to be issued by the Housing and Home Finance Agency, presents a simplified, practical explanation of the method's application in drafting practice. Material included is based on principles developed by American Standards Association Project A62, sponsored by the A.I.A. and the Producer's Council.

While the booklet was primarily prepared in the interest of lowering housing costs, the HHFA feels that, during the present emergency, it gains added value in furthering conservation of materials and manpower in building homes. Full cooperation of architects is strongly urged: "Sufficient modular materials are now available in masonry products, steel and wood windows, kitchen and other equipment to fully warrant modular planning by all architects. A bold adoption of these methods by the entire profession would redound in availability of many auxiliary coordinated products and would in time relieve architects of much needless and repetitive detailing, permitting more time for study of basic planning and over-all design . . ."

The major portion of the manual is devoted to step-by-step procedures of using the Modular System. A three-story apartment house has been used as a representative masonry structure, and a two-bedroom house is developed to show the principles applied to wood-frame construction. Appendices include notes on the theory of Modular Coordination and a series of typical assembly details. A reference bibliography is also included. 54 pp., illus. Price 30 cents. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

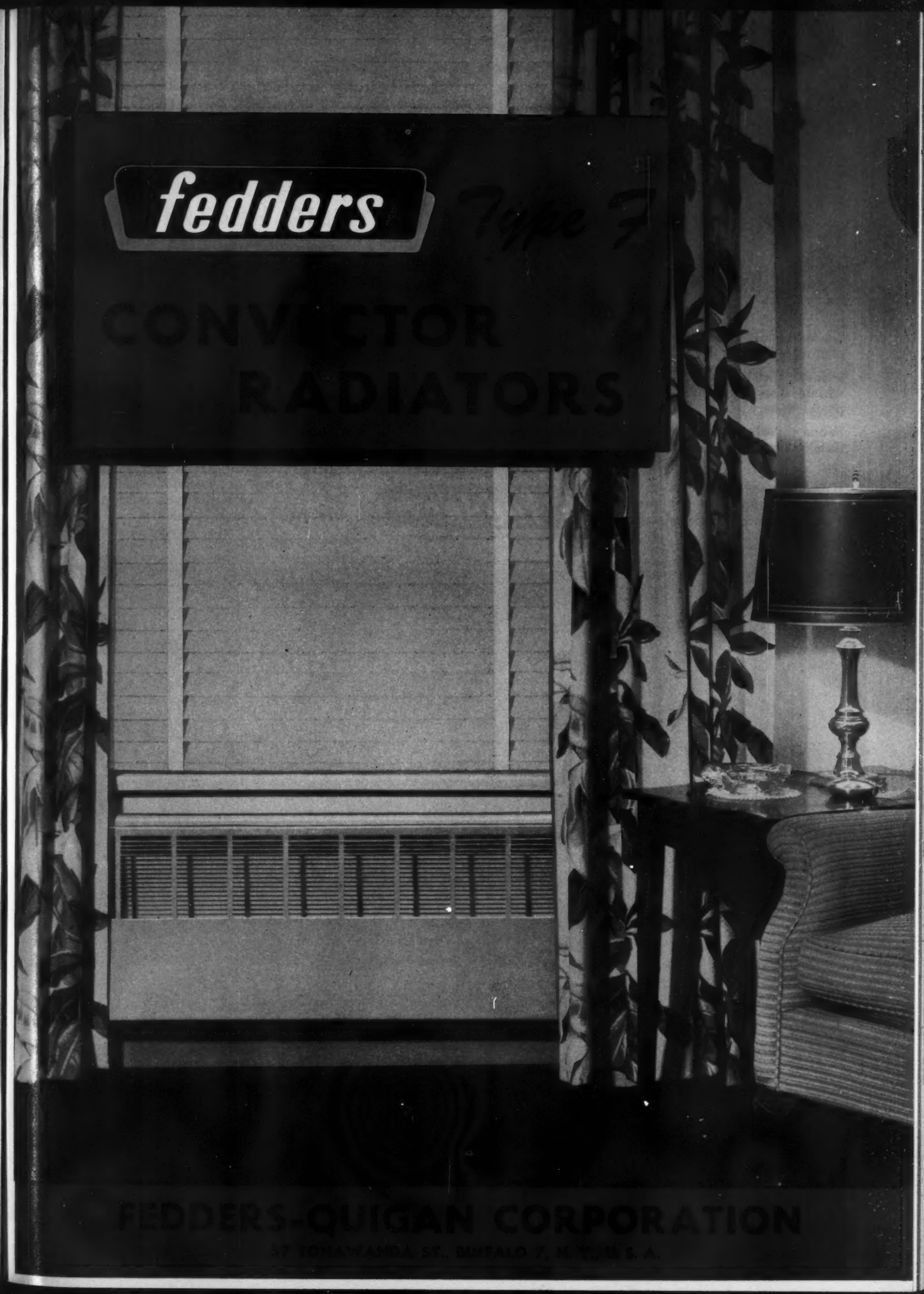
Corrosion Protection

Heresite 15th Anniversary, 1935–1950. Booklet describes a line of phenolic and synthetic rubber coatings for protecting manufacturing equipment from corrosion and for keeping production free of metal contamination. Application methods and resistance properties to acids, oils, etc., are discussed. A number of uses for the coatings on specialized and more general products are presented. Descriptions are also included on thermosetting molding compounds and laminating varnish. 28 pp., illus. Heresite & Chemical Co., Manitowoc, Wis.

Fluorescent Fixture

9300, The New Holophane Unit That Has Everything. Folder describes features and construction of a new surface-attached fluorescent lighting unit. Component parts are shown in photo, detail and exploded view. Tables and charts are given for brightness data, distribution curves, coefficients of utilization and sizes. Applications, installation methods and maintenance are also discussed. Standard specifications for the units are included. 6 pp., illus. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

(*Continued on page 212*)


fedders
Type F
CONVECTOR
RADIATORS
FEDDERS-QUIGAN CORPORATION
57 TONAWANDA ST., BUFFALO 7, N. Y., U. S. A.

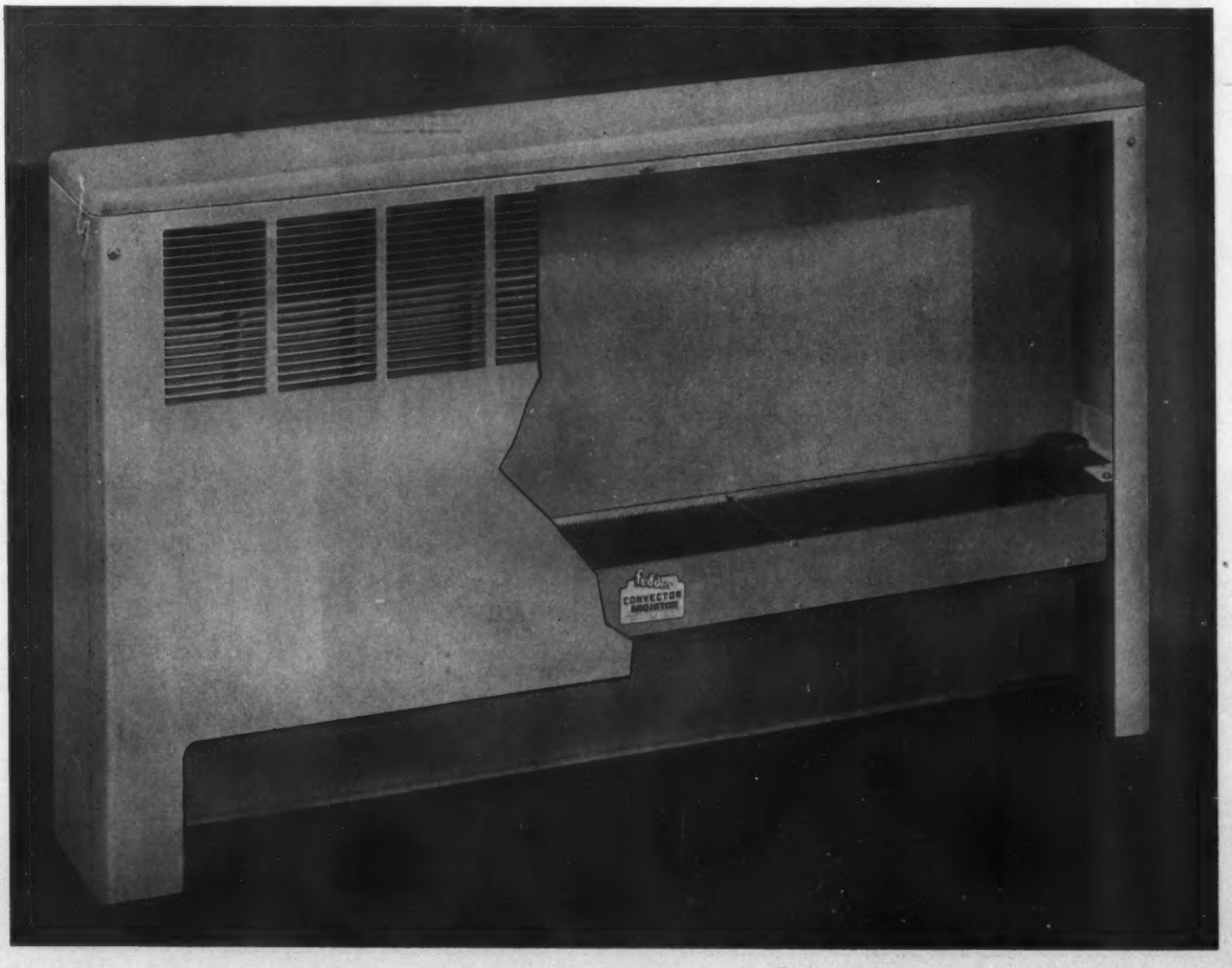
●**FEDDERS TYPE F CONVECTOR-RADIATORS** are easily installed in living rooms, bedrooms, offices and institutions and other locations. They can be used with steam, and forced or gravity hot water systems.

The cabinet can be used as a free-standing unit or partially recessed into the wall. Naturally induced circulation of air entering through archway at bottom and actively flowing out through louvered grille at top assures more uniform temperatures and maximum comfort at all levels.

BUILT FOR MEN WHO KNOW THEIR HEATING

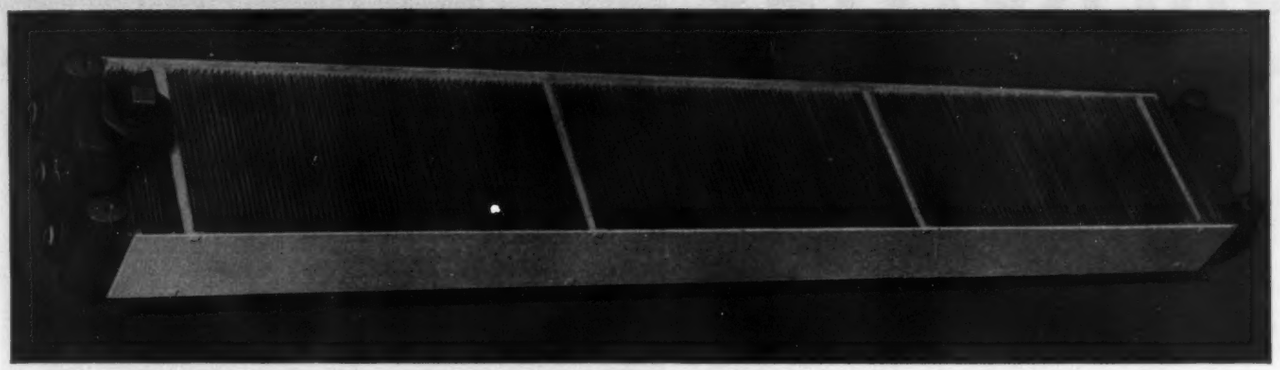
1. Handsome styling, at home in *any* surroundings.
2. Rounded edges and corners contribute to appearance.
3. Directional louvers in front panel direct the heated air actively into the room, assuring more uniform temperatures from floor to ceiling.
4. Cabinet finished in an oven baked ground coat which does not affect (shade out) delicate pastel tints when finished after installation.
5. Front panel easily removed for piping, inspection or cleaning.
6. Closed ends and front panel conceal piping.
7. Lower opening is amply high for convenient cleaning of floor and rug.
8. Light weight, easily handled and completely packaged for simplified stocking, delivery and handling on the job. Package is labeled for easy identification for size.
9. Heating element with copper tubes and aluminum fins assures prompt response to thermostatic control.

fedders



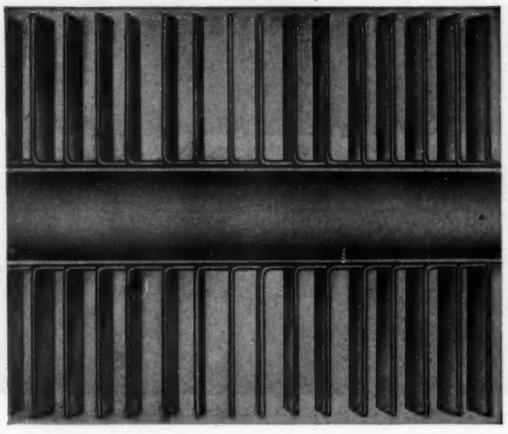
FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

fedders Type F CONVECTOR-RADIATORS



HEATING ELEMENT DESIGN

Fedders Type F heating elements have copper tubes and aluminum fins assuring prompt response to thermostatic control. Fin holes have die-formed collars which give large heat transfer contact between tube and fin as contrasted to line contact where fin holes are simply punched. Fins are mechanically bonded to tubes for efficient life-long metal-to-metal contact.
Tubes are expanded into headers with heavy ferrules power-driven into tubes.

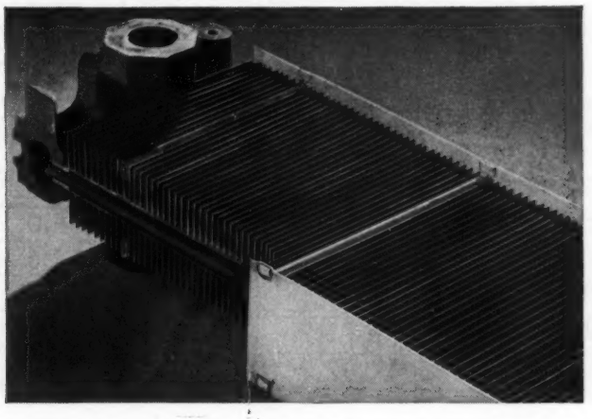


Cross section of fins and tubes. Note collars on fin holes.

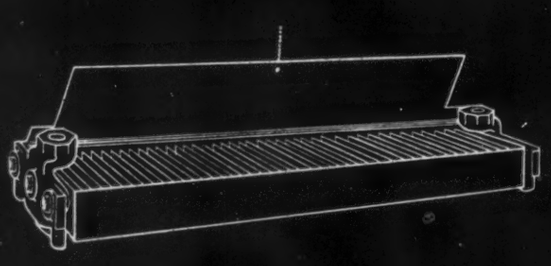
Cast headers are arranged for convenient piping connections at either end, top or bottom.

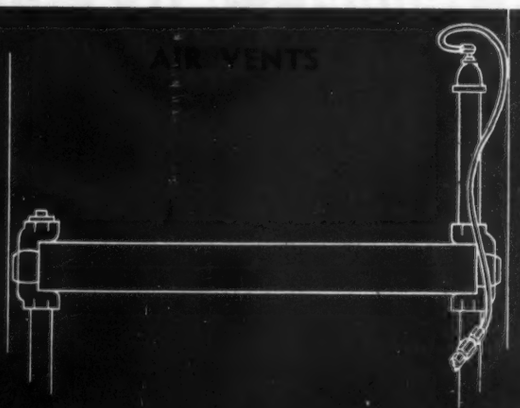
Side plates protect fins from damage. High temperature lining prevents rattles and squeaks. Adjustable screws provide proper pitch of element to suit installation conditions.

Fedders Type F heating elements can be purchased without convector cabinet for use where specially designed concealed radiation is specified as part of the building.



Cutaway view showing header, tube, fin and side plate arrangement.





FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

CAPACITIES of fedders

STEAM EDR

Square Ft. EDR - 215° Steam, 65° Entering Air

Depth	Length	HEIGHT		
		20"	24"	32"
6"	20"	16.2	18.7	20.2
	24"	19.7	22.7	24.2
	28"	23.2	26.8	28.8
	32"	26.8	30.8	33.3
	36"	30.3	34.8	37.9
	40"	33.7	38.9	42.4
	44"	37.4	43.0	46.5
	48"	41.0	47.0	51.5
	56"	48.0	55.5	60.0
	64"	55.0	63.6	70.1
8"	32"	35.9	38.9	41.4
	36"	41.0	44.4	47.0
	40"	46.0	49.5	52.5
	48"	55.5	59.6	63.6
	56"	65.1	70.2	74.7
	64"	74.7	80.8	85.8
10"	36"	45.5	51.5	56.0
	40"	50.5	57.6	62.6
	48"	61.1	69.7	75.6
	56"	71.7	81.8	88.9
	64"	82.3	93.4	102.0

HOT WATER

20" HEIGHT								
Average Water Temperature								
215	210	205	200	195	190	185	180	175
3.7	3.5	3.3	3.1	2.9	2.8	2.6	2.5	2.3
4.5	4.2	4.0	3.8	3.6	3.4	3.2	3.0	2.8
5.3	5.0	4.7	4.5	4.2	4.0	3.8	3.5	3.3
6.1	5.8	5.5	5.2	4.8	4.6	4.3	4.1	3.8
6.9	6.5	6.2	5.9	5.5	5.3	4.9	4.6	4.3
7.7	7.2	6.9	6.5	6.1	5.9	5.5	5.1	4.8
8.5	8.0	7.6	7.2	6.8	6.5	6.1	5.7	5.3
9.3	8.8	8.4	8.0	7.4	7.1	6.6	6.2	5.8
10.9	10.3	9.8	9.3	8.7	8.3	7.8	7.3	6.9
12.5	11.8	11.2	10.7	10.0	9.6	8.9	8.4	7.8
8.1	7.7	7.4	7.0	6.5	6.2	5.8	5.5	5.1
9.3	8.8	8.4	7.9	7.4	7.1	6.6	6.2	5.8
10.4	9.9	9.4	8.9	8.3	8.0	7.5	7.0	6.6
12.6	11.9	11.4	10.8	10.1	9.7	9.0	8.5	7.9
14.8	14.0	13.3	12.6	11.8	11.3	10.6	9.9	9.3
16.9	16.0	15.3	14.5	13.5	13.0	12.1	11.4	10.7
10.3	9.8	9.3	8.8	8.2	7.9	7.4	6.9	6.5
11.4	10.9	10.3	9.8	9.1	8.8	8.2	7.7	7.2
13.8	13.1	12.5	11.9	11.0	10.6	9.9	9.3	8.7
16.3	15.4	14.7	13.9	13.0	12.5	11.6	10.9	10.3
18.3	17.7	16.8	16.0	14.9	14.3	13.3	12.5	11.8

fedders HOT WATER --- STEAM FACTORS

TYPE SYSTEM	Average Water Temperature in Convector-Radiator									
	215	210	205	200	195	190	185	180	175	170
Forced	227	217	207	196	185	175	163	153	142	134
Gravity	182	174	166	157	148	140	131	123	114	107

TO SELECT CORRECT SIZE OF CONVECTOR-RADIATOR FOR USE ON HOT WATER:

1. Obtain correct hot water-steam factor from above table.
2. Divide heat loss (B.T.U.) of each room by this factor to obtain square feet of steam rating.
3. Select convector-radiator size for each room from steam capacity table.

EXAMPLE: The Heat loss of a room has been estimated to be 5,500 B.T.U. One standard 40" window is in the room with the sill 25" from the floor. The forced hot water system will have an average temperature in the convector-radiator of 175°. What size convector-radiator should be selected?

1. The correct factor for a forced hot water system with an average temperature of 175° is 142.
2. A sq. ft. steam rating of 38.7 is obtained by dividing the heat loss of 5,500 B.T.U. by the factor 142.
3. A convector-radiator 6" deep, 40" long and 24" high has a rating of 38.9 sq. ft. as indicated in the steam capacity table above. This convector-radiator is correctly sized for the estimated heat loss and will fit under the 40" wide window with the sill 25" from the floor.

FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

Type F CONVECTOR-RADIATORS

RATINGS *in* THOUSANDS *of* B.T.U. *per hour* (MBh)

24" HEIGHT — Average Water Temperature								
215	210	205	200	195	190	185	180	175
4.2	4.0	3.8	3.6	3.4	3.3	3.0	2.9	2.7
5.1	4.9	4.6	4.4	4.1	3.9	3.7	3.5	3.2
6.1	5.7	5.5	5.2	4.9	4.7	4.3	4.1	3.8
7.0	6.6	6.3	6.0	5.6	5.4	5.0	4.7	4.4
7.9	7.5	7.1	6.7	6.3	6.1	5.6	5.3	5.0
8.8	8.4	7.9	7.5	7.0	6.8	6.3	5.9	5.5
9.7	9.2	8.8	8.4	7.8	7.5	7.0	6.6	6.2
10.6	10.1	9.6	9.1	8.5	8.2	7.6	7.2	6.7
12.6	12.0	11.3	10.8	10.0	9.7	9.0	8.5	7.9
14.4	13.7	13.0	12.3	11.5	11.1	10.3	9.7	9.1
8.8	8.4	8.0	7.5	7.0	6.8	6.3	5.9	5.5
10.1	9.6	9.1	8.6	8.1	7.7	7.2	6.8	6.3
11.2	10.7	10.1	9.6	9.0	8.6	8.0	7.5	7.1
13.5	12.8	12.2	11.5	10.8	10.4	9.7	9.1	8.5
15.9	15.1	14.4	13.6	12.7	12.2	11.4	10.7	10.1
18.3	17.4	16.5	15.6	14.6	14.0	13.1	12.3	10.5
11.7	11.1	10.6	10.0	9.3	9.0	8.4	7.8	7.4
13.1	12.4	11.8	11.2	10.4	10.0	9.3	8.8	8.2
15.8	15.0	14.2	13.5	12.6	12.1	11.3	10.6	9.9
18.5	17.6	16.7	15.8	14.8	14.2	13.2	12.5	11.7
21.2	20.1	19.1	18.1	16.9	16.2	15.1	14.3	13.3

32" HEIGHT — Average Water Temperature								
215	210	205	200	195	190	185	180	175
4.6	4.3	4.1	3.9	3.7	3.5	3.3	3.1	2.9
5.5	5.2	4.9	4.7	4.4	4.2	3.9	3.7	3.5
6.5	6.2	5.9	5.6	5.2	5.0	4.7	4.4	4.1
7.5	7.2	6.8	6.5	6.0	5.8	5.4	5.1	4.8
8.6	8.1	7.7	7.4	6.9	6.6	6.1	5.8	5.4
9.6	9.1	8.6	8.2	7.7	7.4	6.9	6.5	6.1
10.5	10.0	9.5	9.0	8.4	8.1	7.5	7.1	6.7
11.7	11.1	10.5	10.0	9.3	9.0	8.3	7.9	7.4
13.6	12.9	12.3	11.6	10.9	10.4	9.7	9.1	8.6
15.9	15.1	14.3	13.6	12.7	12.2	11.4	10.7	10.0
9.4	8.9	8.5	8.1	7.5	7.2	6.7	6.3	5.9
10.7	10.1	9.6	9.1	8.5	8.2	7.6	7.2	6.7
11.9	11.3	10.7	10.2	9.5	9.1	8.5	8.0	7.5
14.4	13.7	13.0	12.4	11.5	11.1	10.3	9.7	9.1
17.0	16.1	15.3	14.5	13.5	13.0	12.1	11.4	10.7
19.4	18.5	17.6	16.7	15.5	15.1	13.9	13.1	12.3
12.7	12.1	11.5	10.9	10.2	9.7	9.1	8.5	8.0
14.2	13.5	12.8	12.2	11.4	10.9	10.2	9.5	9.0
17.2	16.3	15.5	14.7	13.7	13.2	12.3	11.5	10.8
20.4	19.1	18.2	17.3	16.1	15.4	14.4	13.5	12.7
23.1	22.0	21.0	19.8	18.5	17.8	16.5	15.5	14.6

fedders

ARCHITECTURAL AND MECHANICAL SPECIFICATIONS

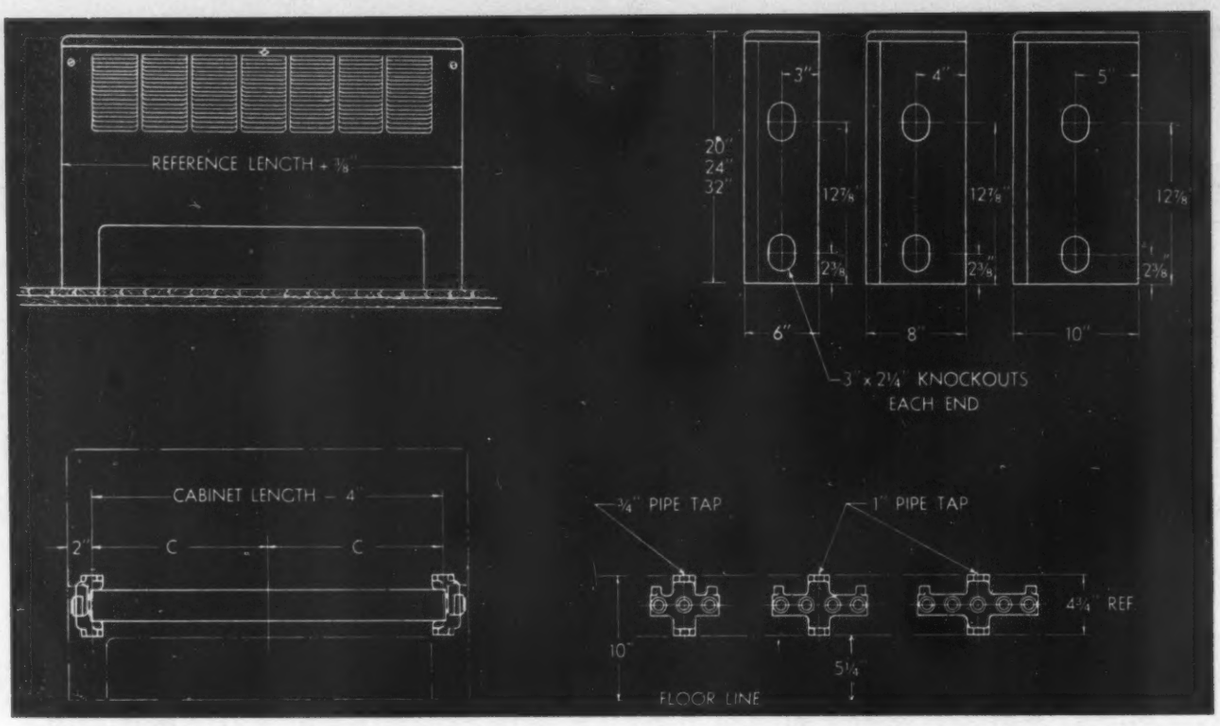
HEATING ELEMENTS — Convector-Radiator heating elements to be of type suitable for two pipe steam or hot water heating systems. They shall be fabricated of seamless copper tubes, aluminum fins, cast iron headers and galvanized steel side plates. Each header must have standard pipe tap inlet and outlet connections at top and bottom of each end. Holes in fins shall have die-formed flanged collars for large-area contact with tubes. Collars shall also serve as spacers between fins. Tubes shall be mechanically expanded into fin collars to provide metal-to-metal contact between tubes and extended surfaces. Tubes are to be permanently expanded into headers by means of power driven brass ferrules.

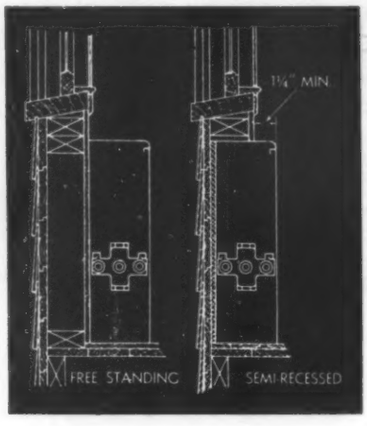
CONVECTOR-RADIATOR CABINETS—Type F Convector-Radiator cabinets with or without dampers as specified, are to be fabricated with back and ends of USS 20 gauge steel. Material for top and front to be USS 18 gauge steel. Exposed corners and edges to be rounded to ⅜" radius. Front panels to be removable and to be held in position by two shoulder rivets at bottom and two quarter-turn quick acting fasteners at top. Integral grilles shall be of die-formed directional louver design. Edges of lower section of cabinet shall be of angle formation to provide formed base and eliminate raw edges. Entire cabinet and front panel shall be finished inside and outside with one coat of oven baked primer. Entire unit including cabinet and heating element to be manufactured by the same company. Provision shall be built in for readily adjustable pitch for proper return of condensate. Knock-outs shall be provided on each end of cabinet for convenient piping.

In addition to Type F Convector-Radiators, Fedders offers America's most complete line of other models for wide variety of special applications to suit every installation requirement.

FEDDERS-QUIGAN CORPORATION, BUFFALO 7, N. Y.

DIMENSIONS fedders *Type F* CONVECTOR-RADIATORS





Cabinet reference lengths are: 20", 24", 28", 32", 36", 40", 44", 48", 56", 64". Actual cabinet lengths are always ⅜" longer than the reference length. The heights are exactly 20", 24", 32". Depths are exactly 6", 8", 10".

Cabinets can be recessed any distance up to 1¼" from the front as shown. This permits easy removal of the front panel. Recesses should be constructed ½" longer than overall length and ¼" higher than height of the unit to be installed. If a convector is recessed into an exposed wall the back of the recess should be covered with ½" insulation.

Side connections should be avoided on recessed installations when units with 6" depths are used.

Heating elements are fastened into the cabinet 5¼" from the bottom.

To obtain pitch, loosen screws at desired end until elements is lowered ¼".

DIMENSION C	REFERENCE LENGTH									
	20"	24"	28"	32"	36"	40"	44"	48"	56"	64"
6" Depth	8⅜	10⅜	12⅜	14⅜	16⅜	18⅜	20⅜	22⅜	26⅜	30⅜
8" Depth				14⅜	16⅜	18⅜		22⅜	26⅜	30⅜
10" Depth					16⅜	18⅜		22⅜	26⅜	30⅜

Fedders Type F Convector-Radiators are shipped with heating element mounted in cabinet, ready to install as a complete unit. They are packed in cartons and properly labeled for easy identification both in the stockroom and on the job.

Architectural Record

fedders
A GREAT NAME IN COMFORT
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57 TONAWANDA ST. BUFFALO 7, N. Y., U. S. A.

INSTALLATION OF GAS APPLIANCES—4: Piping

TABLE 1
Approximate Maximum Gas Consumption For Some Common Appliances

Appliance	Input Btu per hr. (Approx)
Range, domestic, 4 top burners and 1 oven burner	62,500
Range, domestic, 4 top burners and 2 oven burners	82,500
Range, domestic, 6 top burners and 2 oven burners	107,500
Hot plate or laundry stove, domestic, per burner	9,000
Room heater, domestic, radiant type, per single radiant	2,000
Room heater, domestic, radiant type, per double radiant	4,000
Water heater, automatic instantaneous	
Capacity { 4 gal. per minute	150,000
Capacity { 6 gal. per minute	225,000
Capacity { 8 gal. per minute	300,000
Water heater, domestic, circulating or side arm	25,000
Refrigerator	2,500

For automatic storage water heaters and other appliances the input should be determined from the manufacturer's rating.

TABLE 2
Capacity of Pipe of Different Diameters and Lengths in Cu Ft per Hr with Pressure Drop of 0.3 in. and Specific Gravity of 0.60

Length of Pipe (Ft)	Iron Pipe Size (IPS) Inches									
	½	¾	1	1¼	1½	2	3	4	6	8
15	76	172	345	750	1220	2480	6500	13880	38700	79000
30	52	120	241	535	850	1780	4700	9700	27370	55850
45	43	99	199	435	700	1475	3900	7900	23350	45600
60	38	86	173	380	610	1290	3450	6800	19330	39500
75		77	155	345	545	1120	3000	6000	17310	35300
90		70	141	310	490	1000	2700	5500	15800	32250
105		65	131	285	450	920	2450	5100	14620	29850
120			120	270	420	860	2300	4800	13680	27920
150			109	242	380	780	2090	4350	12240	25000
180			100	225	350	720	1950	4000	11160	22800
210			92	205	320	660	1780	3700	10330	21100
240				190	300	620	1680	3490	9600	19740
270				178	285	580	1580	3250	9000	18610
300				170	270	545	1490	3000	8500	17660
450				140	226	450	1230	2500	7000	14420
600				119	192	390	1030	2130	6000	12480

These pages have been prepared from material included in the American Standard,* Installation of Gas Piping and Gas Appliances in Buildings (ASA Z 21.30–1950), *sponsored by American Gas Assn., Inc. In actual installations, reference should be made to manufacturer's instructions, gas company regulations and local codes.

TABLE 3
Multipliers To Use With Table 2 When Specific Gravity of Gas Is Other Than 0.60

Specific Gravity	Multiplier	Specific Gravity	Multiplier
.35	1.31	1.00	.775
.40	1.23	1.10	.740
.45	1.16	1.20	.707
.50	1.10	1.30	.680
.55	1.04	1.40	.655
.60	1.00	1.50	.633
.65	.962	1.60	.612
.70	.926	1.70	.594
.75	.895	1.80	.577
.80	.867	1.90	.565
.85	.841	2.00	.547
.90	.817	2.10	.535

A piping plan should be prepared to show proposed location of gas pipes and branch sizes, with provision for future expansion. Plans should be checked with gas company or proper administrative authorities. When an additional appliance is to be served through present piping, capacity of existing line should be verified. Good practice usually requires piping to be brought to meter location. It should not necessitate placing meter under steps or a window, in an unventilated closet, near a furnace or where subject to damage.

Size of piping should provide sufficient gas for maximum demand without undue loss of pressure between meter and appliances. Size depends on the following factors:

(1.) Pressure loss in system from meter to appliance at maximum probable gas demand should not exceed 0.3 in. water column.

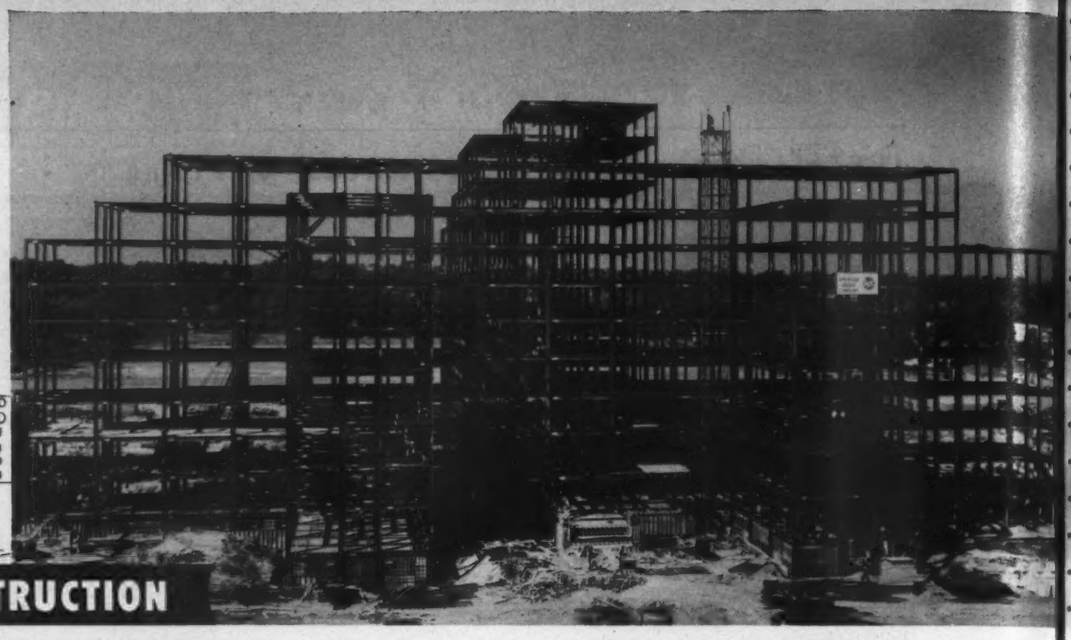
(2.) The volume of gas to be provided for is best determined from manufacturer's Btu ratings of appliances and heating value of gas used. Where ratings are not known, approx gas consumption may be estimated from Table 1. To obtain cu ft per hr of gas required, divide total Btu input of all appliances by avg Btu heating value per cu ft of the gas. The latter value may be obtained from local gas company.

(3.) Capacities of pipe are shown in Table 2. No allowance for a usual number of fittings is necessary.

(4.) For gas of different specific gravity than indicated, multiply figures in Table 2 by Table 3 factors.

(5.) The diversity factor is the percentage of total connected load in use at any one time and is important in determining correct pipe sizes for multi-family dwellings. It is dependent on number and kinds of gas appliances used. Consult local authorities for factor to use.

Concealed piping should be located in hollow partitions, of standard ½ in. IPS or larger. In solid floors, as concrete, place pipes in channels with access. Piping should be protected from corrosive materials and freezing temperatures. Pipe should not run in ducts, flues, dumb waiters or elevator shafts. Underground pipe should be one size larger than in Table 2, but not less than 1¼ in. All piping should be graded not less than ¼ in. in 15 ft to prevent traps, with drips where condensate may collect, tee fittings at bottoms of risers to catch dirt.



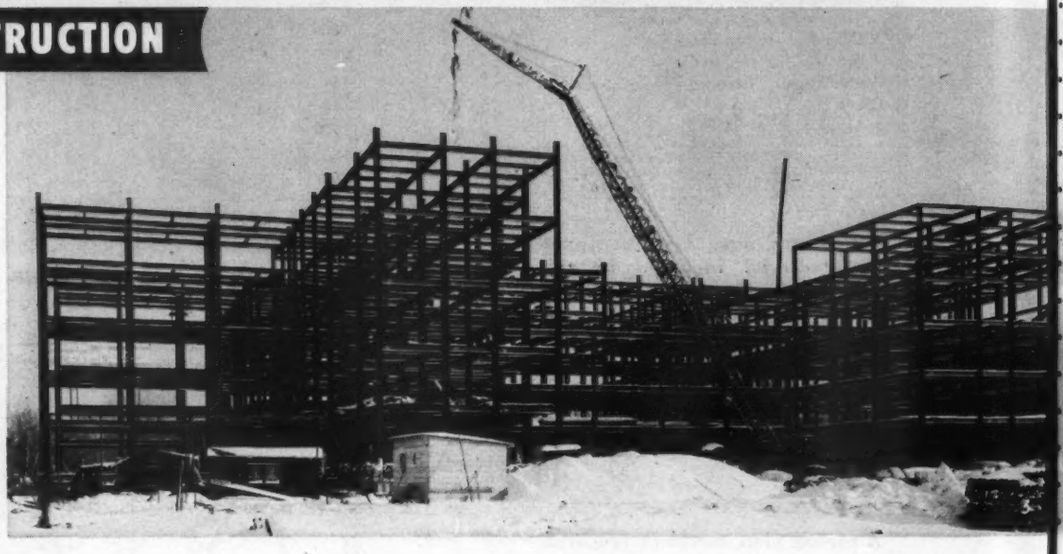
VETERANS ADMINISTRATION HOSPITAL, DENVER, COLORADO. American Bridge Company fabricated and erected the structural steel for main hospital building, 325' x 325', 9 stories high with penthouse; also the boiler house, the chapel, manager's building, apartment building, nurses' quarters and attendants' quarters. Total weight, 2,500 tons. General Contractor, Del E. Webb Construction Co. Plans by Veterans Administration Construction Service.



RIVETED CONSTRUCTION

WELDED CONSTRUCTION





VETERANS ADMINISTRATION HOSPITAL, MINNEAPOLIS, MINNESOTA. Fabricated and erected by American Bridge Company. Project included hospital building No. 43—an 8-story structure, with setback and penthouse, and #43-1, an 11' wide x 78' long, 4-story connecting corridor, and a 61' x 117' x 13' 8" addition to laundry building. Hospital building #43 was of welded construction throughout. Total weight of steel, 2,100 tons. General Contractor, J. D. Hedin Construction Company. Plans by Veterans Administration Construction Service.

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INSTALLATION OF GAS APPLIANCES—5: Domestic Appliances

Non-portable appliances, like water heaters, should be connected to gas piping with rigid pipe or approved semi-rigid tubing not more than 2 ft long. Domestic gas ranges, hot plates, refrigerators and the like should use one of the above connectors or approved flexible metal tubing and fittings. When semi-rigid or flexible tubing is used, it should connect to an outlet in the same room as the appliance, with the connector not over 6 ft long, protected against injury. Clearances for all appliances must allow for combustion air and accessibility. Combustible floors under unlisted appliances should be protected.

Domestic gas ranges should be located where they will not be a hazard to persons or property. Listed domestic gas ranges on combustible floors should be set on their own bases, with clearances not less than shown in Table 5. Unlisted ranges should have at least a 6-in. clearance from back and sides. Bungalow-type domestic gas ranges or dual oven-type combination gas ranges should be spaced from combustible construction and otherwise meet standards for supplementary fuel section of the range.

Where a flue or vent connector is attached to a range, adjacent combustible construction should be protected from excessive heat. Ranges need a vertical clearance above cooking top of at least 36 in. to combustible construction. When the underside of such construction is protected with asbestos mill board at least ¼ in. thick, covered with sheet metal of not less than #28 U. S. gage, the distance shall be a minimum of 24 in. Protection should extend 9 in. beyond range sides.

TABLE 5.
Minimum Clearances for Listed Domestic Gas Ranges

Type of Range		Spacing of Top Burner Opening From Side of Range	Distance from Combustible Construction (In.)			
			Sides		Rear	
			Wall Not Extending Above Cooking Top	Wall Extending Above Cooking Top	Body of Range	Projecting Flue Box
A	Uninsulated	....	6	6	6	1
B	Insulated*	Less than 5 in.	½	3	1	1
	Insulated	5 in. or more	½	½	1	1
C	Flush to Wall	Less than 5 in.	Flush	3	Flush	....
	Flush to Wall	5 in. or more	Flush	Flush	Flush	....

** Approved as insulated models in accordance with American Standard Approval Requirements for Domestic Gas Ranges Z21.1*

Water heaters should not be installed in occupied rooms normally kept closed. They should be close to flue, with short runs of piping to fixtures. Listed gas-fired water heaters should have min clearance to combustible construction in accordance with Table 6. Unlisted heaters need 12 in. clearance on all sides.

A room or space heater should be placed so as not to cause a hazard to room, furnishings or persons. Appliances marked "For use in incombustible fire-resistive fireplace only" should not be installed elsewhere. Listed room or space heaters should be installed with clearances not less than specified in Table 7, except that appliances listed for installation at lesser clearances may be installed in accordance with their listings. Unlisted heaters require clearances from combustible construction not less than:

1. Circulating type room heaters with air circulating between inner and outer jackets around combustion chamber and without direct radiation shall have clearances on all sides of not less than 12 in.

2. Radiating type room heaters should have clearances at sides and rear not less than 18 in.; except that heaters which use metal, asbestos or ceramic to direct radiation to the front need a clearance of 36 in. in front, and if constructed with a double metal or ceramic back may be installed with a clearance of 18 in. at sides, 12 in. at rear. Wall type room or space heaters should be used in combustible construction only if approved for such. Heaters in rooms generally kept closed should be vented to an effective flue and equipped with automatic pilot.

TABLE 6.
Minimum Clearances for Listed Gas-Fired Water Heaters

Type of Heater*	Distance from Combustible Construction (In.)	
	Nearest Part of Jacket	Flat Side
Type A	6	....
Type B	2	....
Type C	....	Flush

** Type A — Miscellaneous (including circulating tank, instantaneous, uninsulated underfired).*
Type B — Underfired, insulated automatic storage heaters.
Type C — Type B units with one or more flat sides and tested for installation flush to wall.

TABLE 7.
Minimum Clearances for Listed Gas-Fired Room Heaters

Type	Distance from Combustible Construction (In.)	
	Jacket, Sides and Rear	Projecting Flue Box or Draft Hood
Warm air circulators	6	2
Radiant heaters	6	2
Wall heaters	Flush	....
Gas steam and hot water radiators	6	2

"Hospital-Versatile" Elevatoring

ST. JOHN'S HOSPITAL
Springfield, Missouri

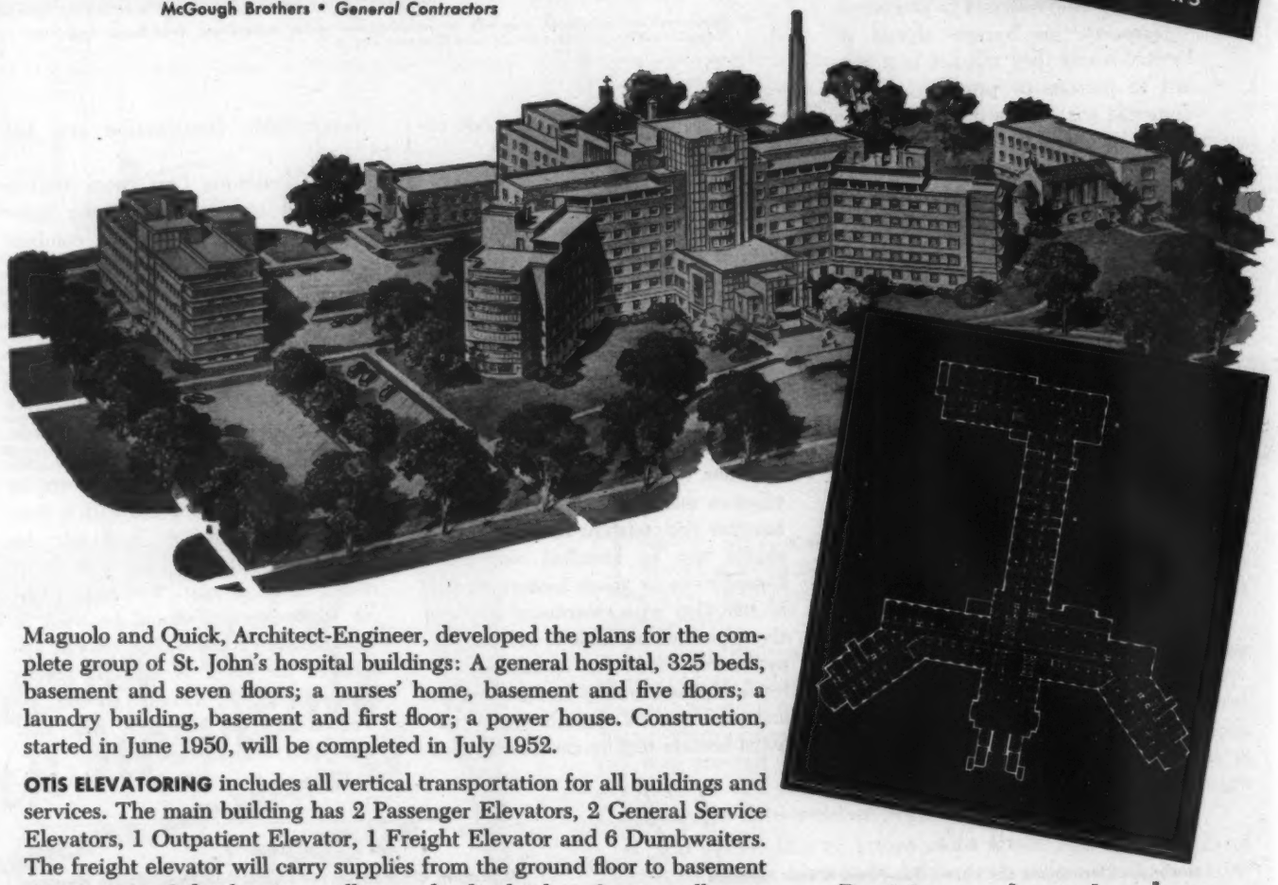
Maguolo and Quick • St. Louis, Mo.
Architect-Engineer
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Otis 6 ELECTRIC DUMBWAITERS

Otis 1 FREIGHT ELEVATOR

Otis 3 SERVICE ELEVATORS

Otis 4 PASSENGER ELEVATORS



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HARDWARE – 27: Sliding Doors

Prepared by Seymour Howard, Architect, Instructor at Pratt Institute, with the cooperation of the American Society of Architectural Hardware Consultants

TYPICAL PLANS OF SLIDING DOORS

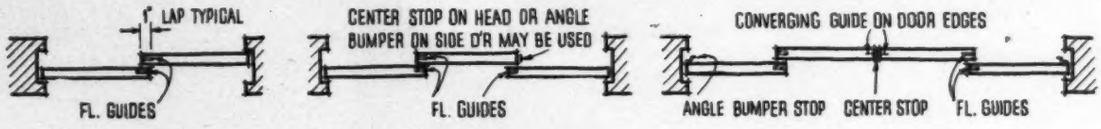
Overhead support shown, but plans are similar for floor support.
For center folding and edge folding accordion doors, see plans on page 117, TIME-SAVER STANDARDS, 2nd edition.



OPEN SIDE POCKET — WALL POCKET — May be used with open side pockets.

SINGLE SLIDING DOORS

BI-PARTING DOORS—May have jamb bolts on both doors or latch (lock) at center.

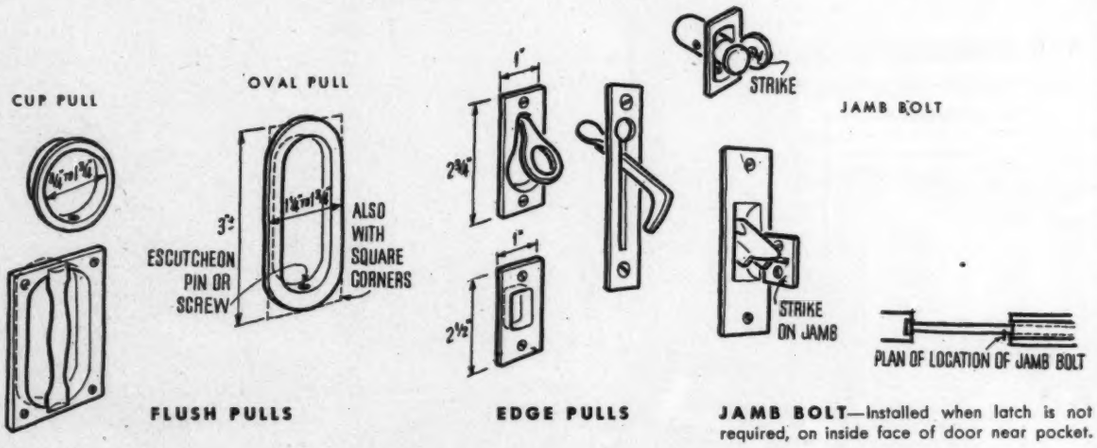


TWO DOORS — Two floor guides required for center door if stop is not used. THREE DOORS — FOUR DOORS

BY-PASSING DOORS (Parallel Doors)

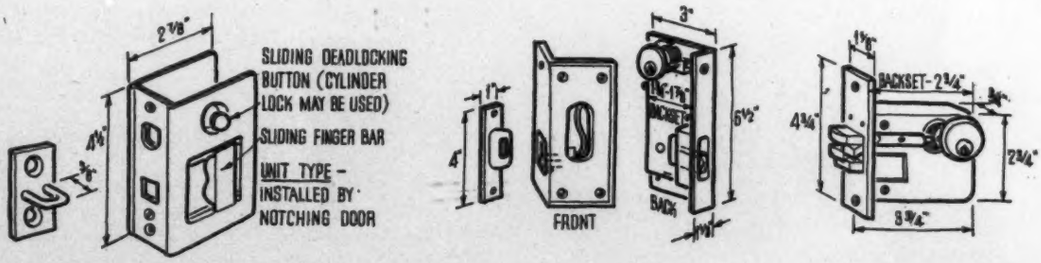
TYPICAL PULLS, JAMB BOLTS, LATCHES & LOCKS

(applicable to all types)



FLUSH PULLS — **EDGE PULLS**

JAMB BOLT—Installed when latch is not required, on inside face of door near pocket.



STRIKE — LATCH

LOCK, Half Mortise, Latch Type Fed. Spec. No. 197.

LOCK, Mortise, Deadlock Type Fed. Spec. No. 198.

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Johnson & Johnson, *Engineers—Architects*



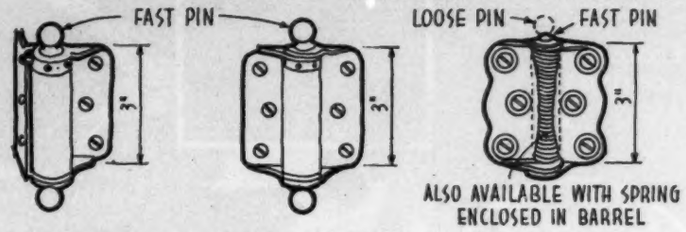
HARDWARE – 28: Screen and Storm Door

Prepared by Seymour Howard, Architect, Instructor at Pratt Institute, with the cooperation of the American Society of Architectural Hardware Consultants

HINGES

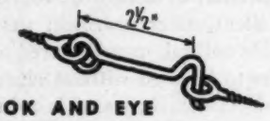
BUTT HINGES: See Hardware Sheets 7, 8 and 9. Use removable pin (except for combination doors). Butts should be galvanized or cadmium plated steel with brass pin, or solid brass, bronze or other non-corroding metal

SPRING HINGES (See also Hardware Sheet 10)



HALF SURFACE ADJUSTABLE TENSION | FULL SURFACE | FULL SURFACE NON ADJUSTABLE

LATCHES AND CATCHES



HOOK AND EYE
For Cabin Door Hook, see Hardware Sheet 13

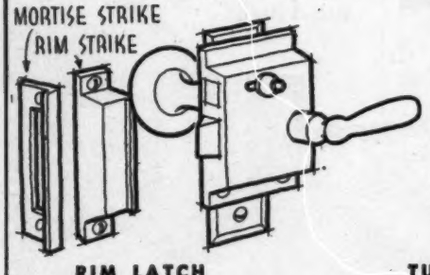


PULL

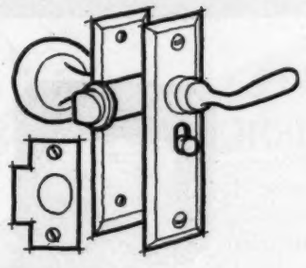


SPRING CATCH

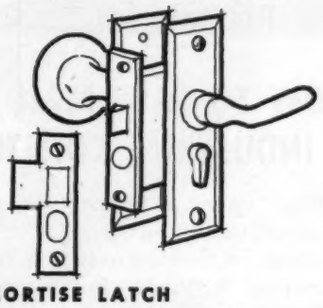
Thumb Latch can be used for these doors; see Hardware Sheet 2



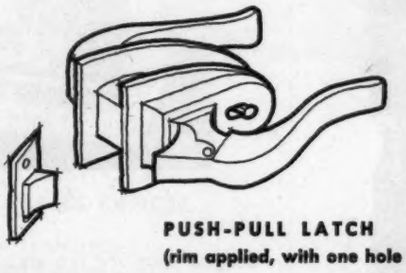
RIM LATCH
Typical Backset 1½ in.



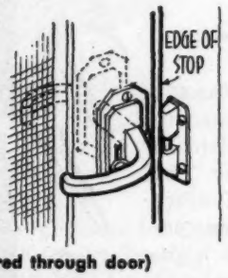
TUBULAR LATCH
Also available with rose instead of escutcheon; typical backsets: 1¼, 1⅝ in.

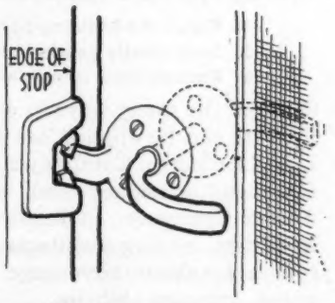


MORTISE LATCH
Also available with slide stop instead of dead bolt; typical backsets: 1¼, 1⅝ in.



PUSH-PULL LATCH
(rim applied, with one hole bored through door)



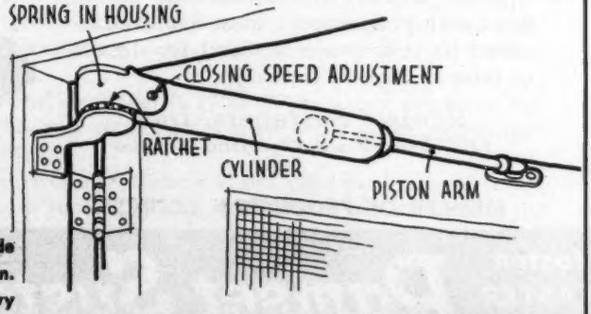


CLOSING DEVICES

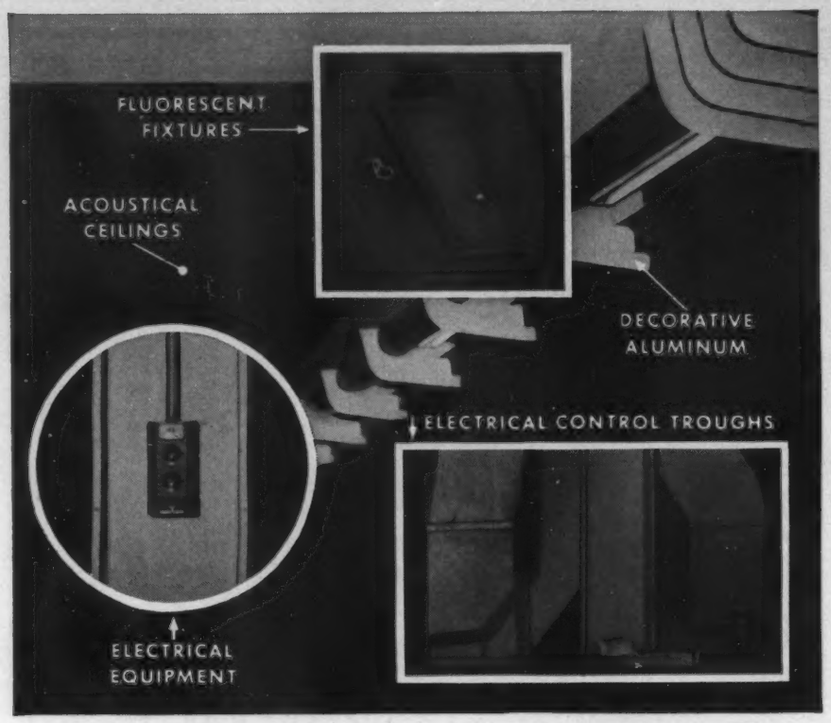
1. **SPRING HINGES** (see top of page)
2. **COIL SPRING** attached to eyes screwed to jamb and to door



3. **LIQUID CLOSER** (See Hardware Sheet 11) best applied to outside of door; parallel arm installation possible between doors if 6 in. clearance provided. This type is used for storm doors and extra heavy screens. Glass in storm doors presents large surface to wind. Strong closing action required and also stay or stop to prevent wind from opening door too far



4. **PNEUMATIC CLOSER** operation similar to liquid closers (see Hardware Sheet 12), but checking element uses air instead of liquid



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Architectural Engineering

PRODUCTS

(*Continued from page 163*)

Diminutive Kitchen Units

A complete kitchen unit, 27½ in. wide, combines refrigerator, storage drawer, 12 by 16 in. sink, drainboard and 3-burner gas range. The unit occupies slightly more than 4 sq ft of floor space. The 4 cu ft refrigerator is Fiberglas insulated; storage drawer is mounted on silent roller bearings; gas burners enable natural, manufactured or bottled gases to be used without changing the hood. Also incorporated is a drainboard adjacent to the sink, formed when the range cover is put down. The top of the unit is made of heavy guage porcelained steel.



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(*Continued on page 180*)



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This 36-page book contains 50 beautiful interiors and fireplace designs.

These photographs were selected from our National Photo Prize Contest. The book contains elevations, sections and plans for installation of two HEATFORM Models: "A" and "S." It also shows proper location of fireplace for best heating results; how to heat adjacent rooms on first and second floor, and other valuable fireplace information you will want.



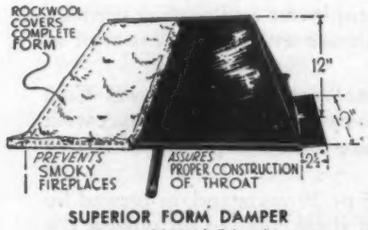
HEATFORM Model "S"
View of Fire from Front & Side

HEATFORM*

- Model "A" is the standard HEATFORM used in homes throughout America for the past 30 years. Complete information on Model "A" and Superior Form Dampers is contained in:

1951—Sweet's Architectural File, Section 29k/Su
1951—Sweet's Builder's File, Section 4-d/Su
1950-51—Western States A-E-C Catalog File

Model "S" completely described in HEATFORM Fireplace Book.



SUPERIOR FORM DAMPER
the Architects' Friend

SUPERIOR FORM DAMPER

— the Architects' Friend — always building good fireplaces without your personal supervision. It saves in labor time — no forms to build, no bricks to cut, no throat to plaster. Cracking of masonry is eliminated by use of rock wool and detached lintel bar. It is constructed of heavy steel for lifetime service.

*T. M. Reg.

SUPERIOR FIREPLACE CO.

Dept. AR 512
1708 East 15th St.
Los Angeles 21, Calif.

Dept. AR 512
601 North Point Rd.
Baltimore 6, Maryland

Pioneer manufacturers of heat circulating fireplaces and Form Dampers. Nationally advertised to millions of potential users. Sold through leading building supply dealers everywhere.

HEATFORM The SUPERIOR heat circulating FIREPLACE
most efficient and durable of all

PRODUCTS

(*Continued from page 178*)

Cartridge Powered Stud Driver

Depending solely upon three grains of powder for energy, this tool is able to drive a steel stud into ¾ in. of structural steel or into aged concrete with the holding power in excess of 4000 lbs, it is stated by the manufacturer.



Lightweight stud driver fastens powder propelled studs into steel, concrete

The *Model 450 Remington Stud Driver* is lightweight, weighing slightly over 5 lbs. It features low recoil, lack of loud explosive noises (about as loud as a pop-gun), and a firing pin indicator which shows if the gun is or is not cocked. The firm's engineers claim that labor costs are cut up to 75 per cent, compared to present methods. It is said to operate comfortably at a rate of five studs a minute. Studs measure ⅝ to 2¾ in. in length, are of fine hard steel, and can be driven into steel, concrete, wood, brick, and other materials. Studs are supplied in 20 sizes in four general types: standard (nail head), break-off head for semi-flush mounting, and external and internal threaded types. The studs are propelled by a 32 cal Long rim fire blank cartridge. The powder load is varied according to the job. A number of safety devices are provided; the muzzle guard must be depressed on the work surface, the safety button must be depressed with one hand, only then may the gun be fired by the free hand. It is impossible to fire the gun unless these steps are followed. A number of accessory fixtures for special applications are available. Remington Arms Co., Inc., Bridgeport 2, Conn.

(*Continued on page 182*)

EASY to handle BEFORE

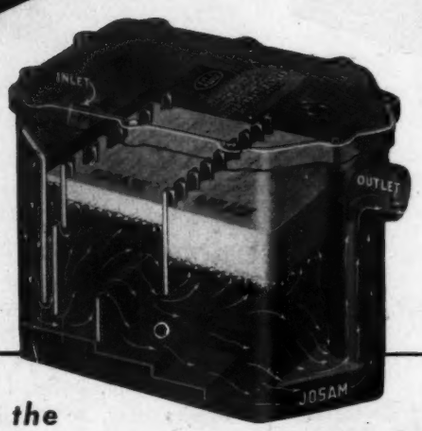


DIFFICULT to handle AFTER

GREASE

never becomes a problem when you install

Josam CASCADE GREASE INTERCEPTORS



with the

PDI SEAL OF APPROVAL

All Josam Cast Iron Grease Interceptors carry the official "Seal of Approval" of the Plumbing and Drainage Institute which signifies that the size, flow rate and grease retention capacity of the interceptor has been established and certified in accordance with the testing and rating procedure for grease interceptors "Plumbing and Drainage Institute Standard PDI-G101." Look for this metal "Seal of Approval" on all cast iron grease interceptors!



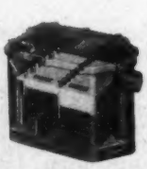
● GREASE in waste water eventually means trouble for the plumbing system, and inconvenience and expense to the occupants.

In schools, hotels, hospitals, restaurants and homes where GREASE results from cooking... in industrial plants, rendering plants, and packing houses where GREASE is a by-product of manufacturing, this grease is a *costly hazard.*

It clogs pipe lines, creates difficult waste problems, and, sooner or later, is the cause of expensive repairs.

You can guard against this hazard easily and completely by installing Josam Grease Interceptors. They intercept the GREASE from waste water regardless of the water temperature... evacuate the solids...keep drain lines free and clear. Separated GREASE is easily removed.

There is a size and type of Josam Grease Interceptor for every purpose. For complete information on Grease Interception, send for copy of Manual "A" today!



Series JA
for domestic and commercial service



Series JL
for dishwashers



Series JX
extension type



Series JNC
for commercial and industrial service



Series PH
for packing house service

JOSAM MANUFACTURING COMPANY

Main Sales Office, Josam Bldg., Cleveland 13, Ohio
Manufacturing Division—Michigan City, Indiana

Representatives In All Principal Cities

JOSAM PACIFIC CO., West Coast Distributors
San Francisco, California

JOSAM CANADA LIMITED, Canadian Distributors
Toronto, Ontario

Josam Manufacturing Company
302 Josam Building, Cleveland 13, Ohio

Please send free copy of MANUAL "A" to

Name

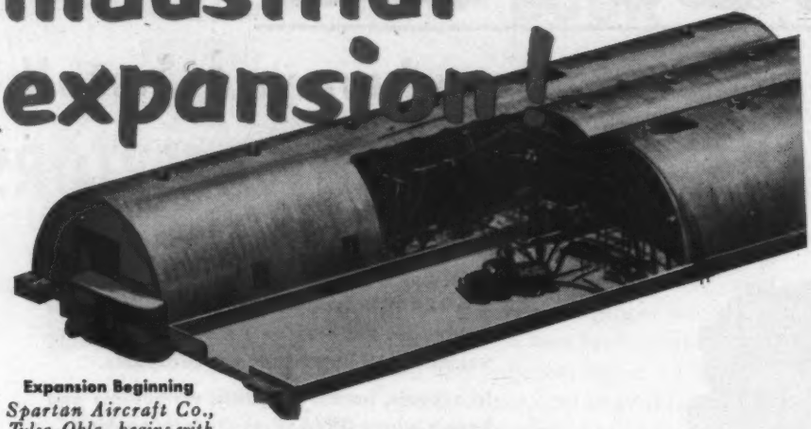
Firm Title

Address

City, Zone and State

THE ANSWER TO
THE NATION'S NEED . . .

for fast industrial expansion!



Expansion Beginning
Spartan Aircraft Co., Tulsa, Okla., begins with 15,200 square feet of floor area. Note completed building below.

Build Quicker with QUONSETS

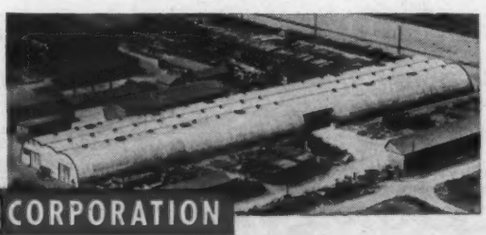
IDEAL FOR FACTORIES, WAREHOUSES, MACHINE SHOPS OR STORAGE BUILDINGS

For additions to your present plant—or for new plants—Quonsets mean *fast* completion, economy of materials, adaptability to *any* use. Also, when plants need expansion, you can add Quonset to Quonset, according to the need.

Made of N-A-X HIGH-TENSILE steel, Quonsets provide non-combustible construction and permanence far surpassing less modern buildings. They require little upkeep—are easily maintained. Let Quonsets serve you.

GREAT LAKES STEEL CORPORATION
Stran-Steel Division, Ecorse, Detroit 29, Michigan

Expansion Completed
Additional Quonsets, with extensions and connecting arches, provide Spartan Aircraft Co. with a total of 35,600 sq. ft. of floor area.



NATIONAL STEEL CORPORATION

Stran-Steel and Quonset Reg. U.S. Pat. Off.

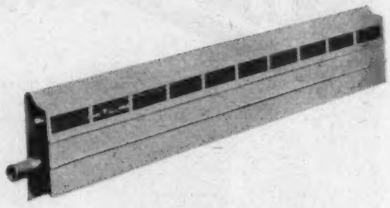
Architectural Engineering

PRODUCTS

(*Continued from page 180*)

Baseboard Radiation

The latest *Fedders Baseboard Radiation* reduces wall streaking by taking cold air that flows down the wall and directing it out into the warm air stream by means of a curved top enclosure, the manufacturer states. This aids greatly in the modulation of temperature between floor and ceiling. Available in flush or semi-recessed types it can be completely installed as soon as rough flooring is laid. Optional lever-operated dampers may be installed with the heaters, or purchased at a later date. The elements are steel fins supplied in lengths from 2 to 12 ft, in 4 in. increments; tubing is available in 1 and 1¼ in. standard pipe sizes. Covers are provided in sixteen lengths; joining strips, corners, and end covers are available to suit the job requirements. The unit is heated with hot water. Fedders-Quigan Corp., 57 Tonawanda, Buffalo 7, N. Y.



Baseboard heater top reduces wall streaking by directing air way from wall

Insulating Coating

Hylag, a coating which provides refractory insulation, is said to be easily trowelled or sprayed on brick, metal lath or concrete block. The material is designed for temperatures from 150 to 2200 F, and is suggested for use on tanks, furnaces, boilers, piping, and in industrial and marine constructions. A coating is also said to fireproof walls, roofs and furnace rooms.

Manufactured in powder state, the insulation is mixed with equal parts of water, must be applied within 30 to 50 minutes after mixing. Three-quarters of an hour after application, the material

(*Continued on page 186*)

It's the ILG "PRV" for vertical flues or duct systems



Eleven ILG Model "PRV" Power Roof Ventilators (Centrifugal Fan Type) recently installed on fourteen-story building in New Orleans.

New, improved power roof ventilator

• If you haven't given consideration as yet to this new ILG Model "PRV" Power Roof Ventilator for tough ventilating applications, you are missing the biggest development in years! Architects and engineers have given the unit a rousing welcome . . . they tell us it has every desirable feature for positive, controlled ventilation, independent of wind and weather conditions. They like the design—a complete ventilating unit consisting of a self-cooled motor direct-connected to a non-overloading, backward curved wheel, plus a selection of air control accessories in a single, weathertight housing. They approve its rugged construction, its precision manufacture. They find the sizes are right to give exceptional air deliveries over a wide range of pressures (free air to 1½" SP). And they bank on ILG's "One-Name-Plate" Guarantee. To get the complete story, call nearby Branch Office (consult classified directory) or send coupon today.

ILG
REG U S PAT OFF

VENTILATION

Free! New engineering data bulletin No. 1901 gives you the complete story—features, sizes, capacities, dimensions. Send coupon now!

☐ Send free bulletin No. 1901.

*Firm Name*_____

*Individual*_____ *Title*_____

*Address*_____ *Zone*_____

*City*_____ *State*_____

MANUFACTURERS' CATALOGS IN SWEET'S FILE



Robert I. Ballinger.
The Ballinger Company,
Philadelphia.
A partnership of
architects and engineers.



"Absolutely indispensable"

says Robert I. Ballinger

"It is impossible to say how often Sweet's File was referred to by members of our staff during the planning of the Yale & Towne plant. I can say, however, that it was used many times for many purposes.

"When the plans were being drawn, Sweet's was in constant use in our drafting rooms. It was consulted many times for information on various products under discussion in inter-department meetings. Also, in meetings with the client, the catalogs in Sweet's enabled us to show exactly what we were specifying. When materials were chosen jointly with the client, as, for example, floor coverings and acoustical tile, Sweet's helped us compare the advantages of different makes and to reach an agreement without delay. With some types of equipment it is necessary to call in the manufacturers' representatives and we often pick those we want to see by referring to Sweet's.

"I can truly say that on the Yale & Towne project, as on all others, Sweet's File was absolutely indispensable in our office."

Sweet's

CONSTANTLY USED

say men who designed and built

this $7,700,000 Yale & Towne plant



The Yale & Towne Manufacturing Company plant
Philadelphia Division (Material Handling Equipment)
on Roosevelt Avenue, Philadelphia
The Ballinger Company, Architects and Engineers
The Turner Construction Company, Builders



Benj. M. Fowler, Jr., Head, Purchasing Department (right) and Robert B. Hollister, Project Engineer. The Turner Construction Company, Philadelphia.

"Saves us time"

says Benj. M. Fowler, Jr.

"Our engineering and purchasing departments use Sweet's File in all of our construction work, and of course Sweet's was a great help on the Yale & Towne project.

"For instance, a specified product may not be available within the scheduled delivery date so we have to get in touch quickly with other manufacturers. We get a line on these by looking up their catalogs in Sweet's. Our engineers find Sweet's a great convenience also in checking plans and design data—there is so much information in one place.

"One thing we like about Sweet's File is the way the suppliers' catalogs are grouped according to products so that they can be easily compared. This feature, coupled with a good index, saves us a lot of time and trouble.

"We wish all manufacturers would include the addresses of their branch plants and local representatives in their catalogs in Sweet's. When we are in a hurry, this is important to us, and to the manufacturer."

Catalog Service

DIVISION OF F. W. DODGE CORPORATION 119 WEST 40th STREET, NEW YORK 18, N. Y.

PRODUCTS
(*Continued from page 182*)

bloats and becomes honeycombed with air cells, which provide the insulating properties. The coating is said to cold-set firmly in 20 to 40 hours, depending on thickness of application, and to dry to a hard, smooth white finish which will readily take paint. Continental Coatings Corp., 304 E. 44th St., New York 19, N. Y.

A.I.D. Home Furnishings Products Competition

A sofa with iron frame and sponge rubber upholstery, a nylon Wilton weave broadloom, a brass ceiling fixture and a hand-loomed casement fabric were awarded Citations of Merit in the 1950 good design competition for home furnishings products, sponsored by the American Institute of Decorators.

The simple and practical sofa was designed by Harry Lawenda of San Francisco, and executed by Kneedler-Fauchere, San Francisco, Calif.



Iron frame sofa and brass hanging lamp receive A.I.D. Citations of Merit



The lighting award went to Paavo Tynell of Helsinki, Finland, for a polished brass hanging light with white enamel interior. It is available through Finland House, New York, N. Y.

The nylon carpet, designed by Virginia Hamill, of New York, is woven in light and dark shades of gray with opposing lines in the weave crossed by small motifs. It is made by Nye-Wait Company, Inc., Auburn, N. Y.

Karl Laurell of Poughquag, N. Y., designed and executed the winning material in the fabric category. It is a transparent weave of linen, nylon, silk and cellophane, intended for use as curtains.

No award was given for wallpaper, the fifth category in the competition. American Institute of Decorators, 41 E. 57th St., New York 22, N. Y.

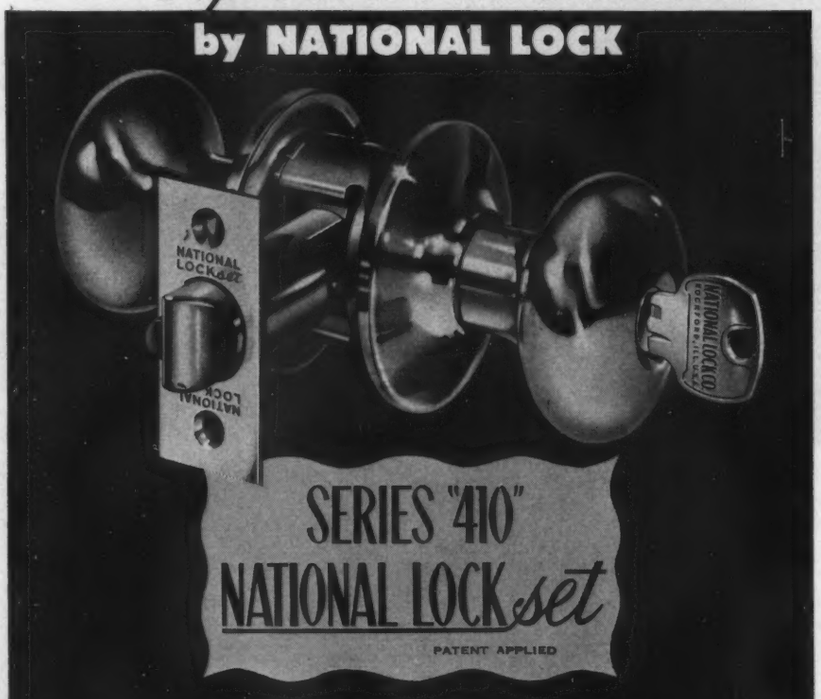
High-Conductivity Concrete

A new formula of special aggregates is claimed to greatly increase the heat conductivity and the wearing qualities of concrete floors. The product was developed to increase the economy and efficiency of radiant heating. It will be available in the form of a dry blend to be added to wet concrete at the time it is mixed. The higher heat conductivity

(*Continued on page 190*)

A Superlative New Product

by NATIONAL LOCK



SERIES "410"
NATIONAL LOCKset
PATENT APPLIED

Outstanding addition to the extensive NATIONAL LOCK line of quality hardware is the Series "410" NATIONAL LOCKset. It's different . . . far different from so-called comparable items. Simplicity and dignity of design . . . lasting finishes accented and protected by baked phenolic lacquer . . . and fast installation are a few of many reasons why NATIONAL LOCKset offers *more* than any other lockset. Write for catalog and full information.

NOW MORE THAN EVER National Lock distinctive hardware . . . all from 1 source



Nos. 411 and 411D KEY LOCK (exterior)



Nos. 412 and 412D TURNBUTTON LOCK (porch, patio)



No. 414 PRIVACY LOCK (bathroom, bedroom)



No. 418 KNOB LATCH (interior passage)

NATIONAL LOCK COMPANY
ROCKFORD, ILLINOIS • MERCHANT SALES DIVISION



ASSURE YOUR PLANT

Low Maintenance and High Morale

Unsightly washrooms are one of the four major causes of personnel peeves . . . and they incur constant maintenance expenses as well.

American-Olean tiled washrooms give your workers what they want, sparkling colors that keep rooms looking clean and new. And better yet, American-Olean tiled walls and floors pay for themselves in lower maintenance costs alone. Tiled washrooms are kept clean and orderly with a minimum of time, and they never need refinishing and repainting.

Write us for the names of good tile contractors in your area.

AMERICAN-OLEAN TILE COMPANY

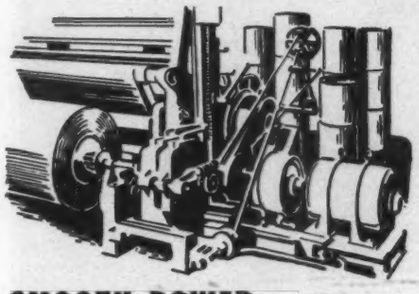
Executive Offices, 925 Kenilworth Avenue, Lansdale, Pennsylvania

It's Real Clay Tile

American Blower...a time-honored name in air handling



Jacksonville, Fla., has a conveniently located American Blower Branch Office to provide you with data and equipment for air handling. You can reach American Blower in Jacksonville by calling 3-3410. In other cities, consult your phone book.



SMOOTH POWER...

Paper machinery faces these needs: adjustable speed to suit humidity and paper thickness; smooth starting to prevent tearing; no-load starting to keep power costs low. American Blower Gyrol Fluid Drives meet these needs in every respect for a Jacksonville paper company as well as other prominent manufacturers. The complete simplicity of Gyrol Fluid Drive is a great advantage. Speed control is flexible, and the unit is easy to operate.



Rx FOR AIR...

One of the stiffest tests air handling equipment can get is that imposed by manufacturers of pharmaceuticals. Cultures and processes require a sterile atmosphere. Temperature and humidity must often be exact. Recently, an important company in this field selected American Blower Fans and Coils for its main air conditioning system . . . a fine tribute not only to the quality of American Blower products, but also to the effectiveness of our research and testing methods. Why not put this valuable experience to work for you?



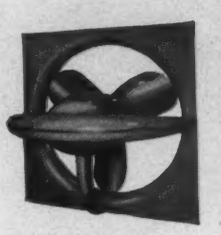
EXPERIENCE COUNTS...

If you're concerned about the air handling requirements in your new defense contract, you'll find American Blower an excellent source for data, equipment, and valuable firsthand experience. For example, the Navy's newest version of the famous Mosquito PT Boat is equipped with American Blower ventilating units.

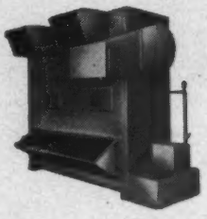
Whether your needs are civilian or military, American Blower heating, cooling, drying, air conditioning and air handling equipment contributes toward improving over-all comfort and efficiency. For data, phone or write our nearest branch office.



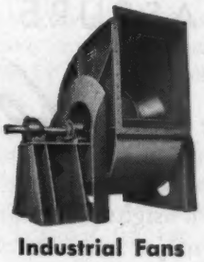
Unit Heaters



Ventura Fans



Air Conditioning Equipment



Industrial Fans



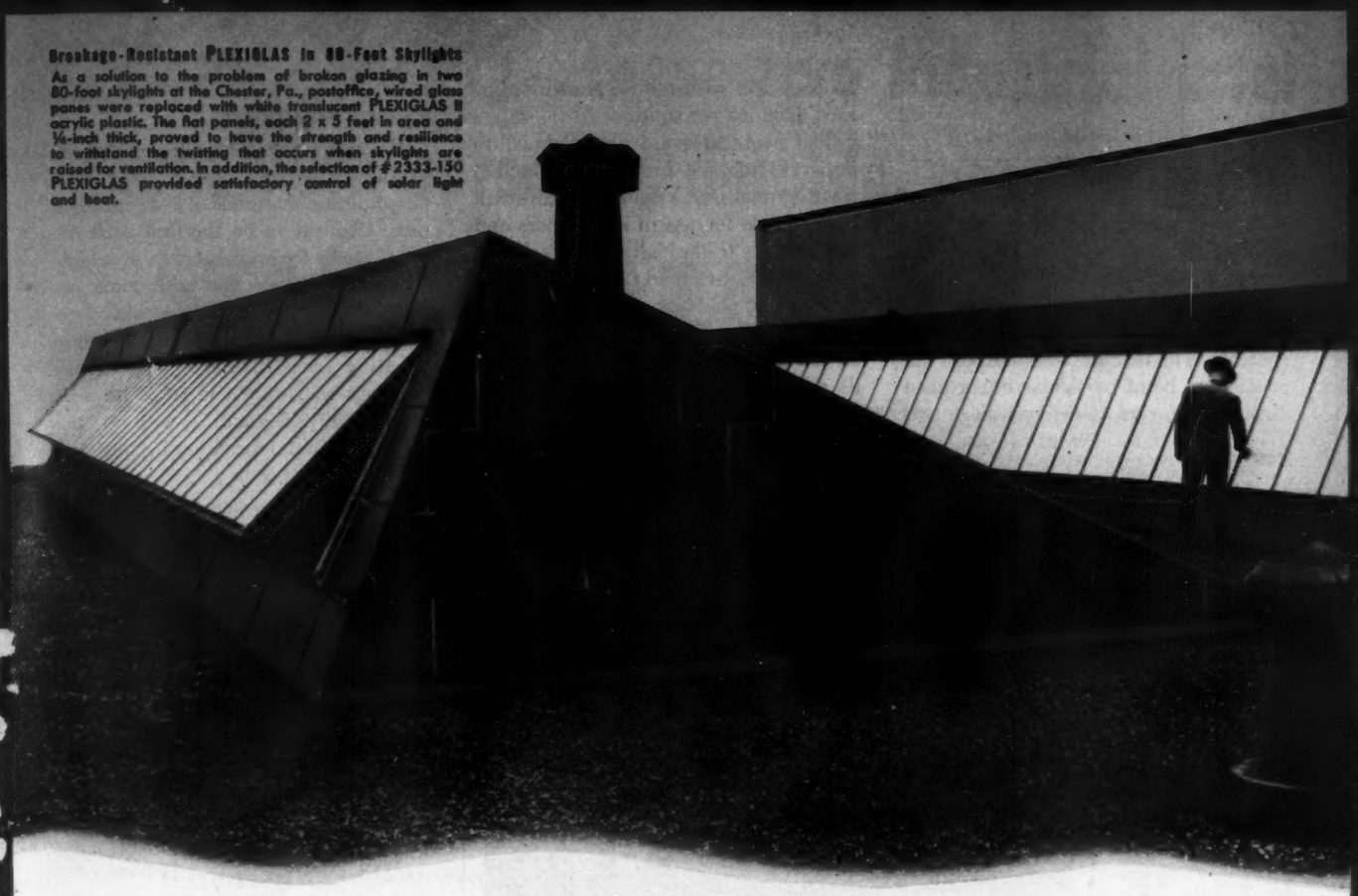
Utility Sets

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of American Radiator & Standard Sanitary corporation

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



Breakage-Resistant PLEXIGLAS in 80-Foot Skylights
As a solution to the problem of broken glazing in two 80-foot skylights at the Chester, Pa., postoffice, wired glass panes were replaced with white translucent PLEXIGLAS II acrylic plastic. The flat panels, each 2 x 5 feet in area and ¼-inch thick, proved to have the strength and resilience to withstand the twisting that occurs when skylights are raised for ventilation. In addition, the selection of #2333-150 PLEXIGLAS provided satisfactory control of solar light and heat.

PLEXIGLAS

For Replacement of Troublesome Glazing

Flying objects and sudden impacts aren't the only enemies of industrial glazing. Excessive cracking and breakage often occur when long heavy skylights are cranked open or shut—when walls settle—or when rusty sash warps, twists, and binds.

Remedy:—PLEXIGLAS II, heat-resistant acrylic plastic. This tough, light material has the strength and resilience to withstand considerable torsion, as well as heavy wind loads and hard blows. In high-breakage areas, it has time and time again proved its ability to cut replacement costs to the bone.

PLEXIGLAS solves other glazing problems, too. Because it is breakage-resistant and less than half as heavy as glass, you can erect it with little or no framing. And its availability as clear or translucent material in flat or corrugated form, its formability, and resistance to weather, adapt it to many glazing applications—from skylight and sidewall glazing in factories to curved display windows in modern stores. Full details of PLEXIGLAS for glazing are yours on request.

CHEMICALS FOR INDUSTRY

• A steadily increasing percentage of PLEXIGLAS production, now at record levels, is required for the defense mobilization program. The supply available for civilian applications is limited.

PLEXIGLAS is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

Canadian Distributor: Crystal Glass & Plastics, Ltd.
54 Duke Street, Toronto, Ontario, Canada.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

PRODUCTS
(*Continued from page 186*)

of concrete made with the aggregate is claimed to effect a 25 to 30 per cent saving in pipe for a radiant heating installation, as compared with the quantity of pipe required with standard concrete. The manufacturers expect the product to be of particular importance during the period of defense shortages. Tests are said to have shown that the concrete will withstand a pressure of at least 4200 lbs per sq in.

The aggregates are also claimed to impart a marked increase in concrete wearing qualities. Various mixtures will be available for use in plant floors and high-density traffic highway areas. When the mixtures are used only for increasing wearing qualities, and heat transfer is not involved, they can be applied to the top surface layers of concrete to minimize costs. Products Planning Co., Bakewell Building, Pittsburgh, Pa.

Plastic Wallboard

Decorative Panelyte is a solid plastic wallboard made of high pressure laminated plastic materials of 5/32-in. thickness. Claimed to be the first such material made for walls, it was developed for use in kitchens and bathrooms, and also for window sills and reveals.

The sheets are installed by a special "floating construction" of matched moldings which are said to position the panels firmly to studding, with no other backing material for either insulation or



Moisture-proof plastic panels are used for wall board (above), reveals (below)



rigidity. The panels are claimed to have excellent thermal qualities, to be moisture proof and to be sufficiently rigid. The moldings are of metal, surfaced with plastic of the same design, color and texture as the panels, to help conceal joints. The molding is nailed to studding to hold panels in place.

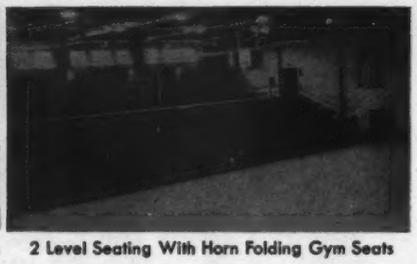
The plastic is said not to blister, and to be chip-proof, cigarette burn-proof, stain resistant, and impervious to foods, alcohol, cosmetics and household cleaning preparations. It is cleaned with

(*Continued on page 192*)

need more Gym space?



3 Gyms in 1 Horn Folding Partitions and Gym Seats



2 Level Seating With Horn Folding Gym Seats



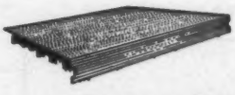
Horn Folding Gym Seats for Fieldhouse Installation



Horn Folding Gym Seats Utilize Stage Space

HORN

FOLDING GYM SEATS
FOLDING PARTITIONS
and
FOLDING STAGES



Save Space, Labor and Time with the handy HORN FOLDING STAGES. WRITE FOR FREE FOLDERS.

Utilize Your Gym Space

Horn Folding Gym Seats and Horn Folding Stages, approved in 48 states, will meet your every requirement. Comfortable, Safe, Convenient and Engineered for maximum efficiency, HORN FOLDING GYM SEATS are custom built in a new and modern factory to exacting specifications. HAVE YOU RECEIVED YOUR COPY OF THE NEW HORN CATALOG? WRITE TODAY AND GET THE FACTS ON "UTILIZING GYM SPACE".

HORN BROTHERS COMPANY
Division of Horn Industries
FORT DODGE, IOWA, U.S.A.
ESTABLISHED 1909

Examine these two industrial interiors built with versatile, durable, easy-to-maintain STARK GLAZED FACING TILE

1. Washington Post Newspaper Building, Washington, D. C. Architect: Albert Kahn & Co. Associates. General Contractor: John McShain & Co.

2. Sterling-Winthrop Research Institute Laboratory, Rensselaer, N. Y. Architect: W. Stuart Thompson. Contractor: Grove-Shepherd-Wilson and Kruge.

Each of these industrial interiors performs an entirely different function . . . yet Stark Glazed Facing Tile is ideal for both!

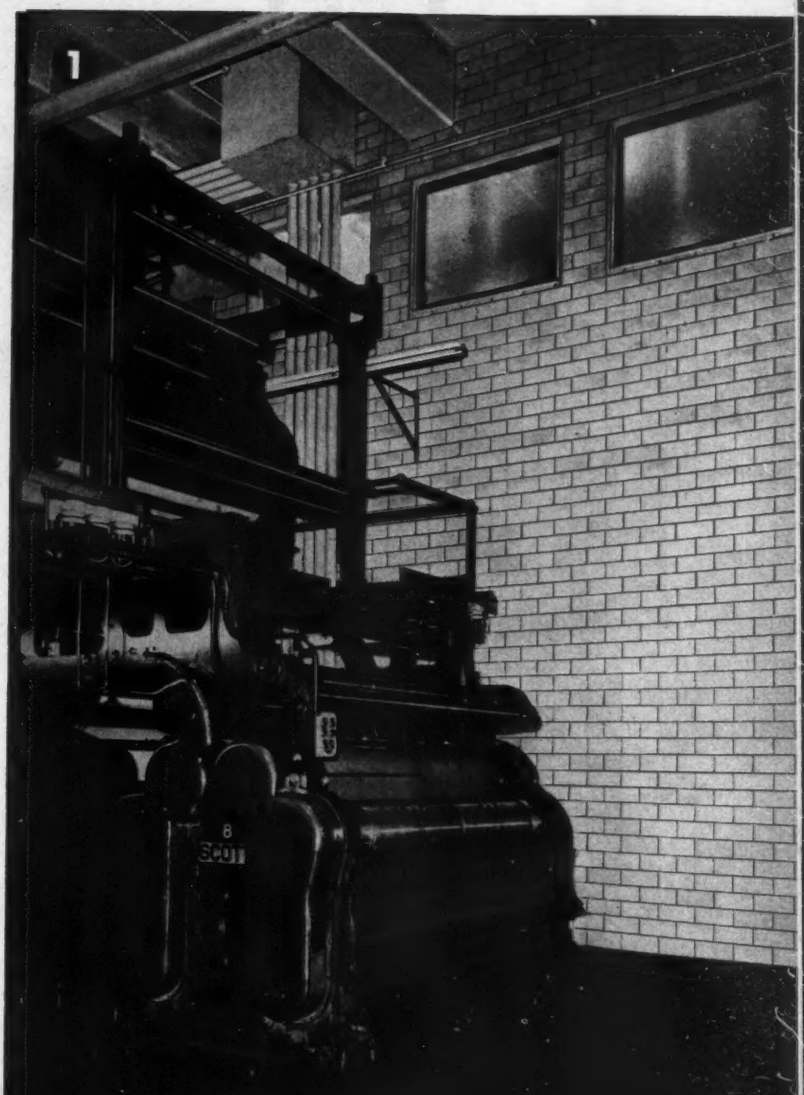
In the first interior . . . rugged durability is the keynote plus low maintenance.

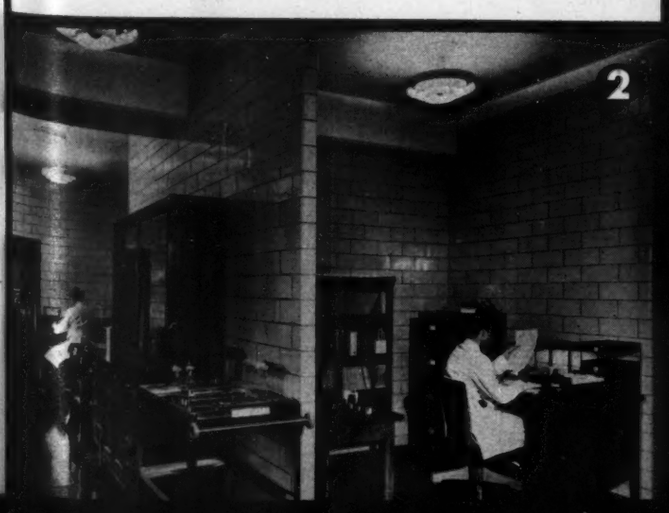
In the second . . . spotless good looks, excellent lighting and ease of maintenance are all important.

Stark Glazed Facing Tile fulfills all these requirements. It's good looking. It's rugged. It's easy to clean and keep clean. It helps create ideal lighting conditions. It never needs painting or redecorating.

Produced in modular sizes, Stark's Facing Tile builds a *wall* and *finish* in one . . . goes up fast . . . saves construction time and cost.

For architects, engineers, contractors and building owners and administrators, we have prepared a brochure on the modular application of Stark Glazed Facing Tile. It contains much valuable information and will be sent free to you upon request.

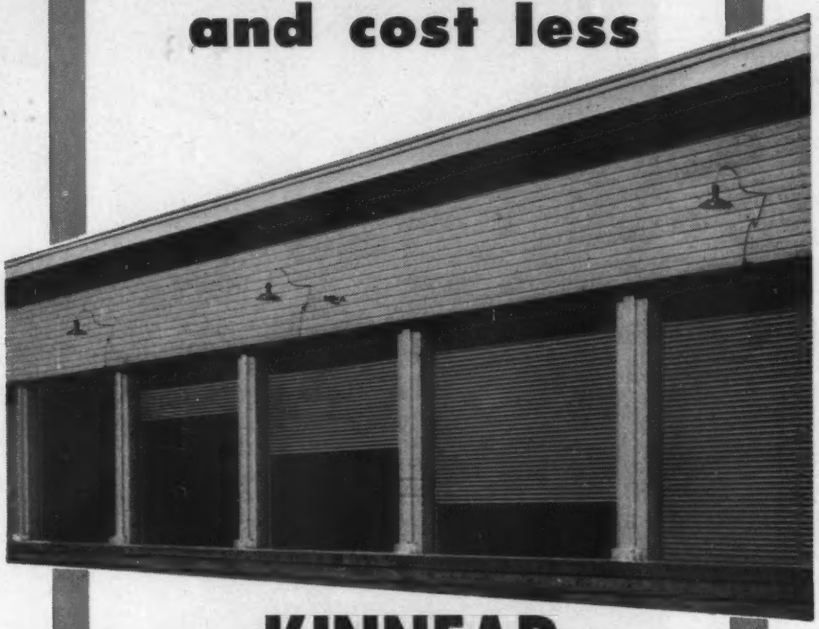




STARK CERAMICS, INC.

Canton 1, Ohio

save space with better doors that last longer and cost less



KINNEAR ROLLING DOORS

The easy, upward action of Kinnear Rolling Doors brings time-saving efficiency to any doorway. The strong, all-metal, interlocking slat curtain opens completely out of the way, safe from damage . . . provides extra safety against fire, wind and intrusion when closed. And they're ruggedly built in every detail, to give extra years of low-cost, low-maintenance service. Any size; motor or manual control. If you haven't a Kinnear catalog for quick reference now, send for your free copy of the latest issue.

THE KINNEAR MANUFACTURING COMPANY

Factories:

1860-80 Fields Avenue
Columbus 16, Ohio

1742 Yosemite Avenue
San Francisco 24, Calif.

Offices and Agents in All Principal Cities

SAVING WAYS IN DOORWAYS

KINNEAR ROLLING DOORS

PRODUCTS

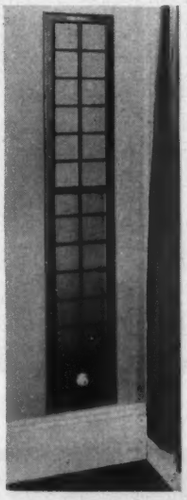
(*Continued from page 190*)

soap and water. Panelyte Div., St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.

Radiant Glass Panel

A new *Electriglas Radiant Heat Hi-Panel* heating unit has been designed for recessing in limited bathroom wall areas. The unit is 56½ in. high, 10¼ in. wide, and may be used for 110 or 220 volts, 1000 watts, 3413 Btu.

The heater consists of two glass panels encased in a hammered silver finished frame. A chemical element is fused in the back surface of the glass. The surface is said to reach approximately 300 F when the unit is in operation. The glass itself is claimed to be virtually unbreakable. The unit is fully automatic in operation, and is available with built-in thermostat, or without for use with separate wall control. Installation is claimed to be simple and economical.



Electric radiant glass panel is designed for use on restricted wall areas

Although primarily designed for use in bathrooms, the heater is also suitable for other areas where space is limited, such as in halls, kitchens and small offices. Appleman Glass Works, Bergenfield, N. J.

(*Continued on page 194*)

Tri-Flex Aerovane

in 525 William Penn Place Building

Pittsburgh, Pennsylvania

Architects, engineers, contractors — planners and builders of tomorrow — choose their materials with care. The quality of the completed job depends on them. And the specialists responsible for the successful, dependable operation of an air conditioning system pay strict heed to the proper selection of the air distribution equipment... *the point where success is measured.*

In the 525 William Penn Place Building — as in important buildings from coast to coast — the choice was the outstanding combination of Tri-Flex and Aerovane Grilles and Registers... the combination that insures maximum flexible control of air delivery ... meets the most exacting requirements of performance. For consistent quality that guarantees the results, standardize on Tri-Flex and Aerovane. For complete information, write for Catalog 48S.



HARRISON & ABRAMOVITZ
Architects

WILLIAM YORK COCKEN
Associate Architect

TURNER CONSTRUCTION COMPANY
General Contractors

MEYER, STRONG & JONES
Mechanical Engineers

DRAVO CORPORATION
Heating, Ventilating & Air Conditioning Contractors

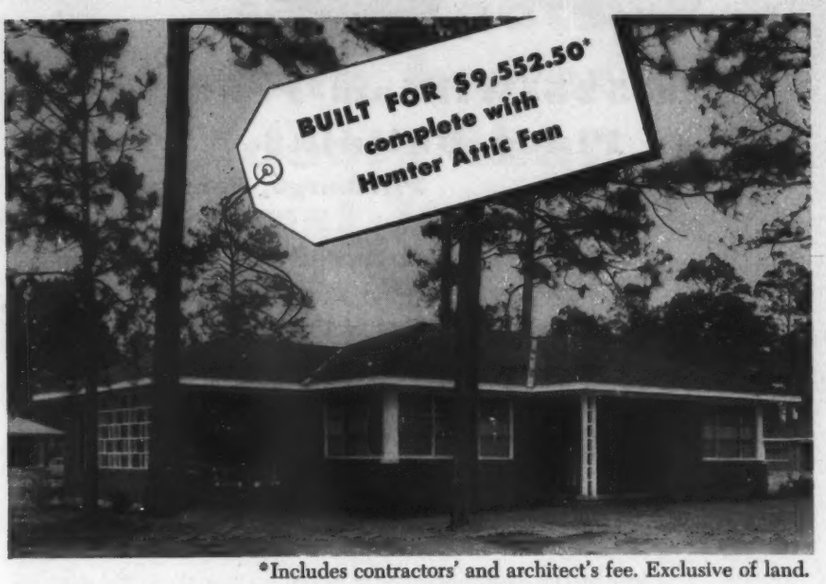
TUTTLE & BAILEY INC
NEW BRITAIN, CONNECTICUT

ENGINEERED PRODUCTS FOR HEATING, AIR CONDITIONING AND VENTILATING

8TB51

WHERRY HOUSING AT KEESLER AIR FORCE BASE, BILOXI, MISS.

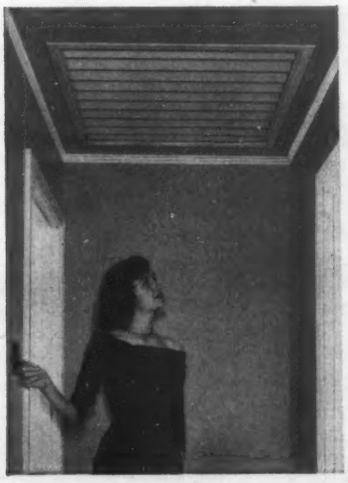
Sponsored by Russel S. Wilkinson, James E. McGehee, Robert G. Snowden and Max B. Ostner of Memphis, Tenn. Architect: Everett Woods; Contractors: Wilkinson, Snowden & McGehee. The 2-bedroom house pictured below rents for $85.00 and is one of 718 units which include duplexes and 2, 3 and 4-bedroom residences.



*Includes contractors' and architect's fee. Exclusive of land.

New 718-unit project provides cool comfort for Air Force families

It is unusual for a low-cost housing development to offer so much in the way of modern beauty, high quality materials and extra features for the comfort and convenience of tenants. One of the most popular features of this Keesler Housing Project are the Hunter Attic Fans which will keep occupants cool and comfortable on hottest summer nights.



Cool comfort at low cost

The sponsors of Keesler Housing selected Hunter Package Attic Fans because of their dependable performance and low-cost installation. Fan, motor and suction box are all in one unit that requires only a ceiling opening in hallway and 18" clearance in the attic. Four models, ranging from 4750 CFM to 9700 CFM (ratings certified) fit any home size and any climate. Quiet, powerful, dependable, these fans are guaranteed by Hunter—exclusive fan makers since 1886.

Wall switch starts fan and opens automatic shutter to pull in the cool night air and drive out the oven-like heat that accumulates throughout the day. In only a few minutes it's 10 to 20 degrees cooler inside.

Hunter SINCE 1886

Write for 36-page booklet, "How to Cool for Comfort" and complete data.
HUNTER FAN AND VENTILATING COMPANY
396 S. Front St., Memphis 2, Tenn.

HUNTER *Package Attic Fans*

PRODUCTS

(*Continued from page 192*)

New Textiles

Three new fabrics for summer decoration have been added to the Knoll line of textiles. They are: *Knoll Stripes*, *Sequence* and *Transportation Cloth*.

The stripe pattern, designed by Eszter Haraszty, is handprinted on white linen-weave cotton. It comes in four color combinations: red-orange, olive and black; blue, dark blue and olive; yellow, charcoal and grey; and rust, green and grey. The fabric is 50 in. wide.



Knoll Stripes, one of three new patterns introduced by Knoll Associates

Sequence was designed by Vezelay of the Societe Industrielle de La Lys of Paris. It is a light handprint stripe, with a chintz finish given to the orange and white, light blue and black, and yellow and black combinations. A natural linen weave background is seen in black and oyster white, and charcoal and white.

The third fabric was developed in cooperation with the American Viscose Corp., to meet transportation and institutional needs. The Avisco fibre is said to have high tensile strength and durability and require no special processing, backing or rubberizing. Available in brown, black, grey, yellow and red, it is 52 in. wide. Knoll Associates, Inc., 575 Madison Ave., New York 22, N. Y.

(*Continued on page 196*)

Raincoats for structures...

Sprayed, Brushed or Troweled on!



Keep moisture at bay... it wreaks havoc!

Specify Flintkote Protective Coatings . . . for structural steel, exposed concrete, inside surfaces of masonry, insulation materials . . . wherever dampness and corrosion are a problem.

Flintkote Protective Coatings are available in both asphalt cutback and emulsion types, and can be applied by spray, brush or trowel.

Whatever your waterproofing or dampproofing system, choose from mastics, semi-mastics and liquid-asphaltic compounds . . . fibrated, non-fibrated Flintkote Protective Coatings.

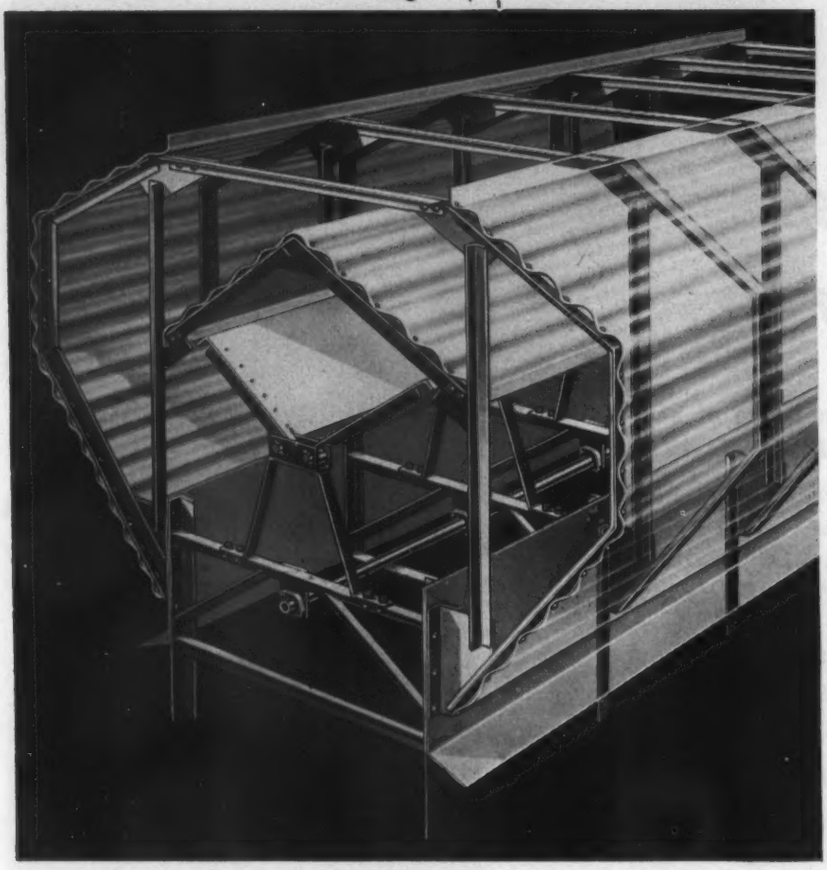
Available also are asphalt primers, caulking compounds, membrane reinforcing and spandrel cloth—all of them effective "raincoats" for guarding structures against moisture.

Write for complete specifications and application data on using these efficient materials in both new construction and maintenance.

THE FLINTKOTE COMPANY, *Industrial Products Division,*
30 Rockefeller Plaza, New York 20, N. Y.
Atlanta • Boston • Chicago Heights • Detroit
Los Angeles • New Orleans • Washington
The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto; also Montreal

FLINTKOTE *Products for Industry*





REVITALIZE WITH BURT MONOVENT VENTILATORS

Fresh air is your best assurance of active, "working" employees. Bad air slows production.

Heat, smoke and fumes can be replaced by fresh, live air economically with the Burt Monovent Continuous Ridge Ventilator. Installed on any type roof, it functions as a giant exhaust valve along the entire length of the structure. A complete range of sizes from 4" to 96" handles almost any application.

Simple to maintain, fool-proof and easy to install, the Burt Monovent is an investment that soon pays its way in improved production. See Sweet's for further details or write for Bulletin S.P.V. 6.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

48 E. South Street • Akron 11, Ohio

PRODUCTS

(*Continued from page 194*)

Kitchen Cabinets

Finger-Tip Cabinets, recently introduced at the American Furniture Mart in Chicago, feature counterbalanced doors which lift from the bottom. When open, the doors are said to be out of the homemaker's way. The shelves are wire and, according to the manufacturer, provide maximum cleanliness and visibility. Included in the new line are "underwall" cabinets which fit directly under the larger wall cabinets and open from the top, down. Also included is a corner cabinet with open shelves and an open shelf designed to fit over the refrigerator.



Living-kitchen incorporates new line of metal storage cabinets

The cabinets were included in the "New World Kitchen," unveiled at the Mart. This kitchen-living unit features a lily pond, aquarium, soda fountain and complete equipment for preparing meals and laundering. It is designed to serve as a family center as well as a food center and has a dining table which can be converted into a games table. The living area of the irregularly-shaped room has a stone fireplace with raised hearth and is designed for outdoor-type cooking. General Electric Co., Appliance and Merchandise Dept., Bridgeport 2, Conn.

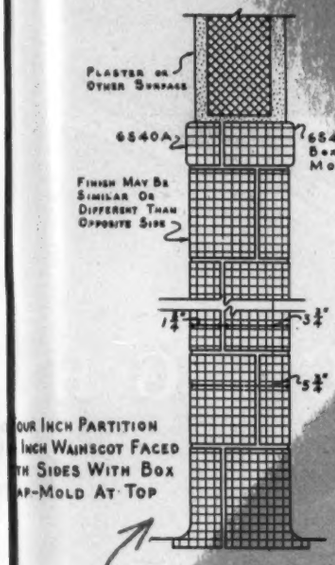
Rubberized Paint

Wallhide Rubberized Satin Finish is a new interior paint which is said to be as durable and washable as enamel, and to have the appearance of a flat wall paint. Among the advantages claimed

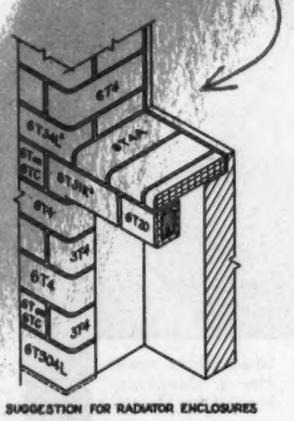
(*Continued on page 200*)

This free booklet will help you design or build better with Facing Tile

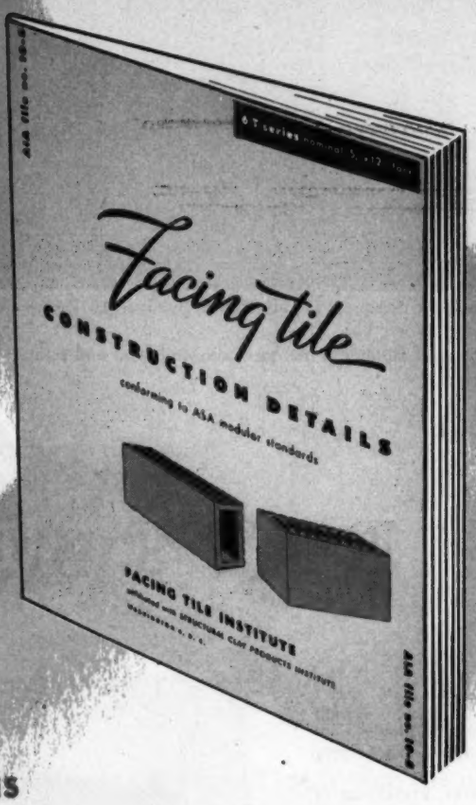
SEND FOR YOUR FREE COPY



TYPICAL ILLUSTRATIONS



SUGGESTION FOR RADIATOR ENCLOSURES



PROFUSELY ILLUSTRATED
EASY TO FOLLOW

"Facing Tile Construction Details"

"Facing Tile Construction Details" has been prepared by the technical staff of the Facing Tile Institute. It is a most helpful aid to anyone who designs or builds with this versatile building material.

The booklet shows various wall sections and the application of the units in the wall. Clear cut drawings illustrate 4" and 6" partitions; 6" and 8" walls faced on one and two sides; 8" and 10" cavity walls and 12" solid walls.

Also shown are 4", 6" and 8" partitions bonded to the main wall with rounded edges and copings. Locker and cabinet recesses with octagon protection around columns or piers are another feature. One page, devoted to radials, demonstrates 12" and 24" external radial corners plus 48" internal corners.

"Facing Tile Construction Details" is a valuable companion piece to our shapes and sizes Catalog 51-C. You should have both!

USE THIS COUPON TO GET YOUR FREE COPIES

Today

FACING TILE INSTITUTE, Department AR-7
1520 18th Street, N. W., Washington 6, D. C.

Gentlemen:

Please send me free copies of ☐ Facing Tile Construction Details ☐ Catalog 51-C

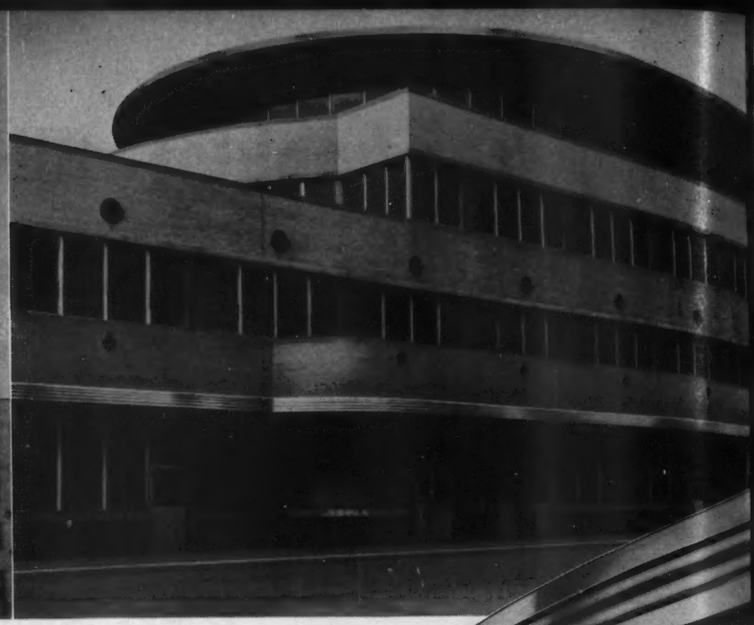
Your Name_____ Title_____

Your Company_____

Street & Number_____

City_____ Zone____ State_____





• All exterior marquees are aluminum, by Overly.

• Close-up of aluminum marquee, showing facia and ceiling. ▶

GREATER PITTSBURGH *is A*

GENERAL DATA

NAME: Main Terminal Building, Greater Pittsburgh Airport

LOCATION: Moon Township, Coraopolis, Pennsylvania

OWNER: County of Allegheny, Pennsylvania

SIZE: Main building is a half-circle, 460′ in diameter; over-all width is 575′; over-all length, including south dock, is 1060′.

COST, MAIN BUILDING: Approximately $9½ million

FIGHTER BASE: Air Force protection is adjacent.

COUNTY DATA

BOARD OF COUNTY COMMISSIONERS

John J. Kane, Chairman
Harry W. Fowler — Ernest Hillman

DEPARTMENT OF AVIATION

John B. Sweeney, Director
Edward G. Messner, Chief Engineer

DESIGN DATA

ARCHITECTS

The Office of Joseph Hoover, Pittsburgh, Pennsylvania

CONSULTANTS

Parsons, Brinkerhoff, Hall & MacDonald, New York City

ENGINEERS

Lee W. Cook, Structural
E. S. Tower, Plumbing
J. P. Warner, Electrical
T. F. Rockwell, Mechanical
William Murdoch, Sanitary

CONSTRUCTION DATA

GENERAL CONTRACTOR

Dick Construction Company, Pittsburgh, Pennsylvania

OVERLY ALUMINUM FABRICATION AND ERECTION

Air-conditioned Penthouse; Comfort Station, walls and louvers; Coping, and gravel stops; Control Tower; Cornices; Dome on Mirador; Electrical-equipment Room; Elevator Penthouse; Flashings; Marquees; Mirador; Theodolite on Mirador; Ticket Booth, permanent; Vent Caps; Window Soffits

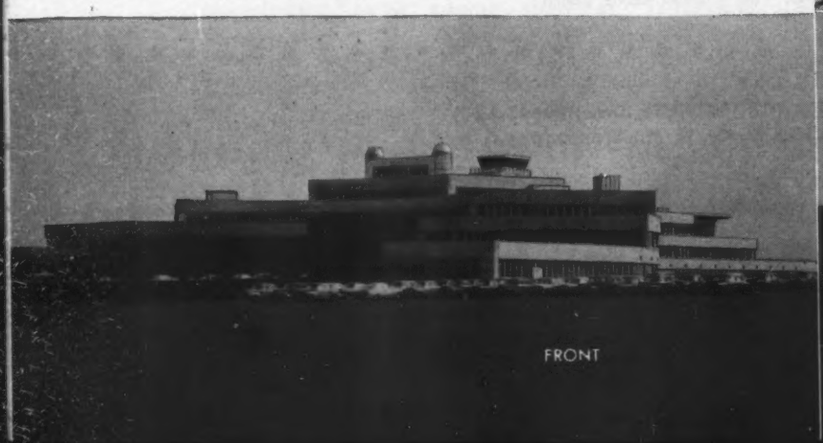
(OVERLY ALUMINUM, CONTINUED)

OVERLY STEEL ITEMS

Kalamein Doors; Pressed Steel Frames



Observation tower also is aluminum, erected by Overly



FRONT



SIDE



• Overly aluminum work gives lifetime protection.



• Aluminum mirador, dome, and theodolite by Overly.

is prepared for

AIR · PROGRESS

The Greater Pittsburgh Airport ranks with the nation's largest, and the modern super terminal building pictured on these two pages will meet the expanding needs of this progressive region for a long time to come. West and east docks will be added as needed. Although many innovations are represented architecturally in the design and materials, all were planned for initial and ultimate economy. *Overly* is proud to have been selected for the prefabricated architectural aluminum work and its installation.

Overly *Manufacturing Company*
Greensburg, Pennsylvania

METAL PRODUCTS SINCE 1888

Sales Representatives in all Principal Cities



REAR

PRODUCTS
(*Continued from page 196*)

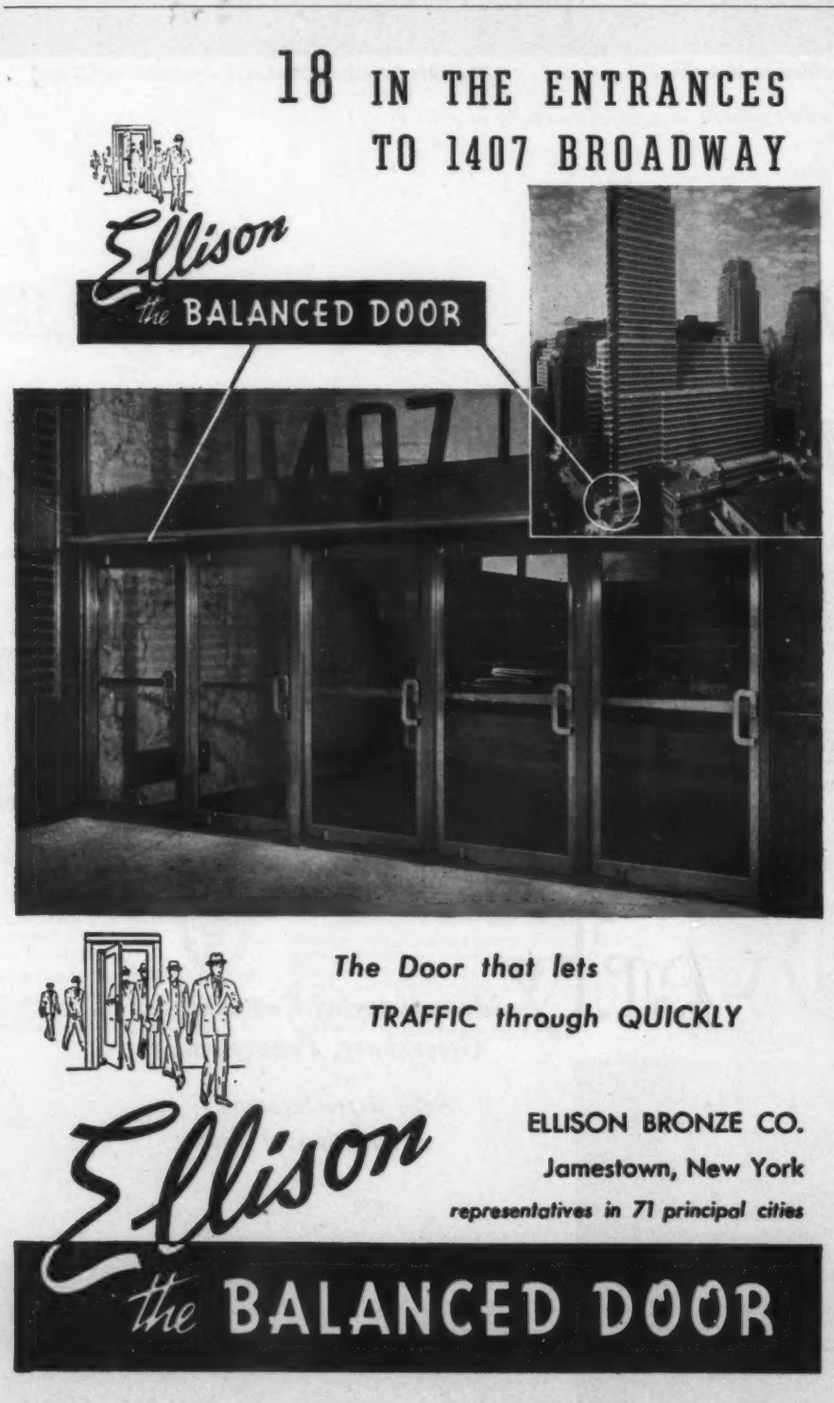
for the paint are: no primer needed, and ease of application with brush, spray or roller. The paint can be applied on new or old plaster, paint, wallpaper, wallboard, brick, concrete, cinderblock, wood or primed metal.

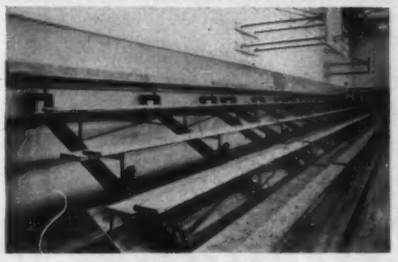
Because of the rubber-like nature of the film, most spots can be readily removed, the manufacturer says. Another feature of the product makes it especially good for use in hotels, hospitals and other institutions where quick drying of paints is an important factor. Drying time is said to be one hour, with no objectionable odor during or after application.

The finish is available in 12 standard colors. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

Fold Away Bleachers

Beatty Standard Rollway bleachers which can be pulled out or folded back against the wall by one person, come with 4 to 14 rows and benches. They fold up against a wall, occupying a space of 2 ft 6 in. deep in stored position and are said to accommodate 30 per cent more persons than standard type bleachers. The structure consists of welded tubular steel units, with 2 in. Douglas Fir seats and floor boards which are spaced to provide a 24 in. back-to-back seating arrangement. The manufacturer claims that the depth between rows is adequate to allow spectators to sit comfortably with knees straight.



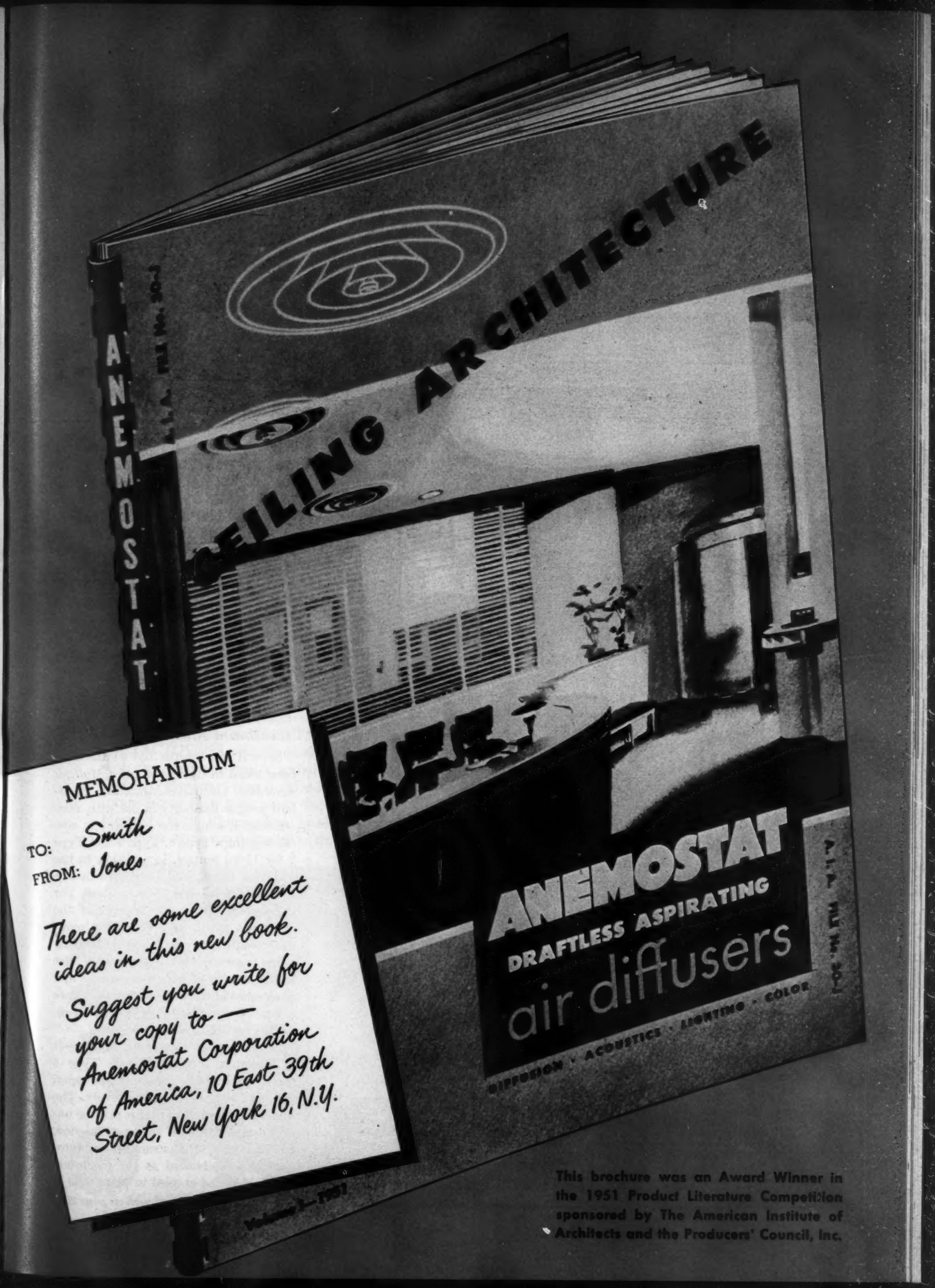


Featuring ease of operation, folding bleachers provide large seating capacity with ample leg room for spectators



Only 18 lin in. are utilized for each seat. A single 16 lin ft section of five rows is said to accommodate nearly 55 occupants; when folded it frees 112 sq ft of floor space. The entire two-fold unit, says the manufacturer, is constructed with a minimum of moving parts, and the balance of steel beams and absence of springs or clips is claimed to insure ease of operation. The total weight of the occupied unit is distributed at three points: by a double bolted hanger at the wall, by a plywood covered I beam paralleling the wall and by a downweight at the center. Stress on the wall is claimed to be minimized and the even

(*Continued on page 202*)



This brochure was an Award Winner in the 1951 Product Literature Competition sponsored by The American Institute of Architects and the Producers' Council, Inc.

PRODUCTS
(*Continued from page 200*)

distribution of weight is said to protect the floor from scarring. Integrated locks permit the unit to be secured both in open and closed positions, as well as to discourage tampering. Installation provides either front-to-rear stairway aisles, or modifications of this. Beatty Safway Scaffold Inc., Tunnel Ave. and Beatty Rd., San Francisco.

Safety Awards

The Grand Prize Winner of the Sixth Annual Home Safety competition sponsored by Lewis & Conger is the "push button" gas stove, developed by Borg-Warner's Norge Division. An electric glow-coil ignited by pushing a button, lights the gas, thus doing away with the gas pilot and all its hazards such as the danger of the low-flame pilot being blown or snuffed out.

Among other manufacturers who received Safety Awards for their contributions to home safety in the past year were Murray Manufacturing Corp., Brooklyn, N. Y., for the *Murray Circuit Breaker* which protects against overloading or short circuits; Slater Appliances, Inc., Woodside, N. Y., for the *Kloz-A-Lite*, an automatic light for closets; MacLeod Safety Device, Libertyville, Ill., for the *MacLeod Safety Bar*, which gives extra support to users of stepladders; and the National Electric Products Corp., Pittsburgh, Pa., for the *Plug-In-Strip*, which provides adequate outlets and proper grounding for electrical appliances.



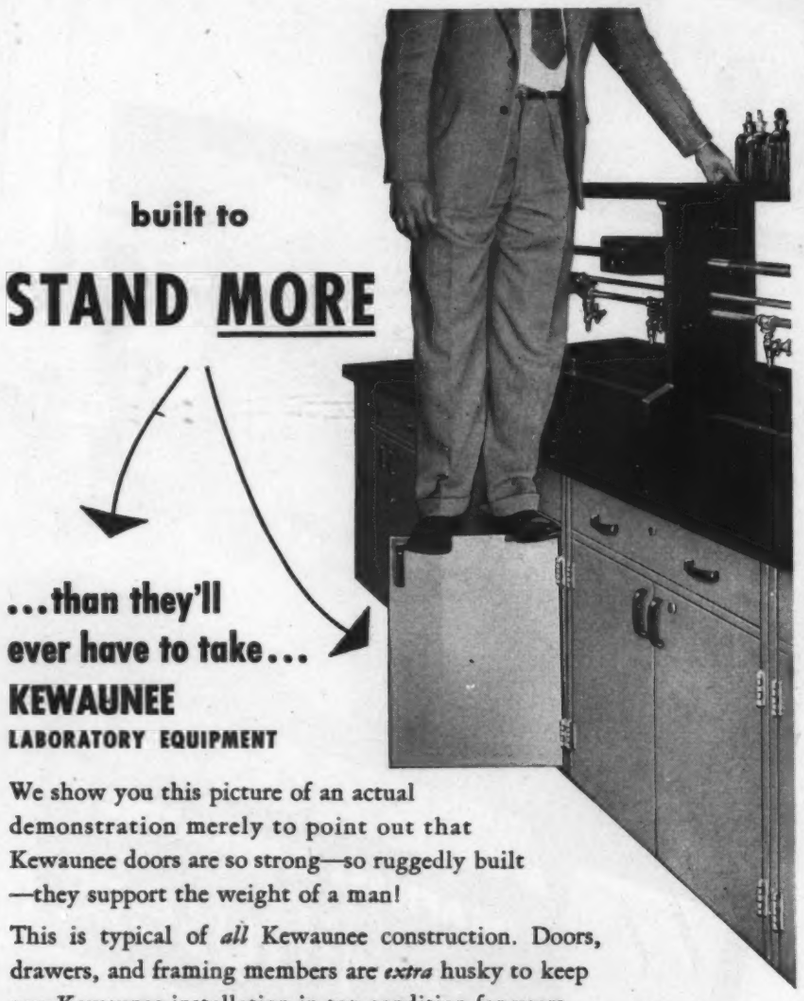
Push button stove wins safety award

Aluminum Insulation

Several new lengths and widths have been added to the line of *Infra Multiple Accordion Aluminum Insulation*. To afford greater flexibility in use with various stud spacings, the company is now offering Infra Type 6, Type 4 and Type 2 for 12-in. centers, in addition to the standard 16 in., and Retardive insulation for 8-, 16- and 24-in. centers. For in-between widths, one or more of the accordion pleats may be folded over; wider widths may be made by stapling strips together. The type numbers refer to the number of reflective surfaces and spaces provided by the insulation. Types 6 and 4 are also available in 24-in. widths for ceiling and roof spaces.

Small cartons containing 1000 sq ft of insulation are available in Type 4 for 16- and 24-in. centers. These equal 750- and 500-lineal ft respectively. The material is packed so that it may be unfolded and cut with shears as needed. In all types, the structure is automatically established as the insulation is unfolded and stapled in place, and is

(*Continued on page 204*)



built to

STAND MORE

...than they'll ever have to take...

KEWAUNEE
LABORATORY EQUIPMENT

We show you this picture of an actual demonstration merely to point out that Kewaunee doors are so strong—so ruggedly built—they support the weight of a man!

This is typical of *all* Kewaunee construction. Doors, drawers, and framing members are *extra* husky to keep *your* Kewaunee installation in top condition for years to come. And that's just one more reason why Kewaunee Laboratory Equipment leads the field in technical excellence and value!

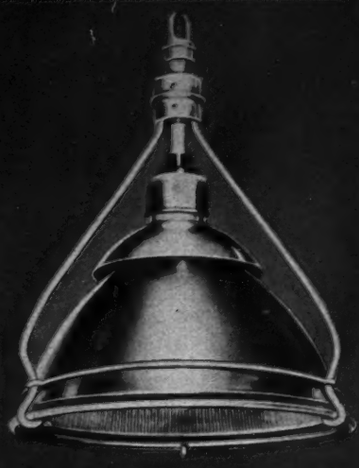
Write today for free Kewaunee catalog, indicating whether interested in wood or metal construction. No obligation.

Kewaunee Mfg. Co.
C. G. Campbell, President
5046 S. Center Street, Adrian, Michigan

Representatives in Principal Cities

RECOMMENDED COMBINATION

For Lighting Heavy-Industry Plants



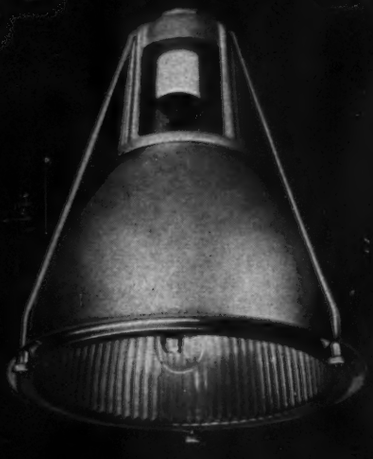
No. 693-AL-HS

HIGH BAY LIGHTING

HIBAY* lighting applies to mounting heights exceeding 25 feet and finds its primary use in Mills, Shops, Hangars, etc. Equipment is designed for 500, 750, 1000 and 1500 Watt Incandescent lamps as well as for the newer type 400 and 1000 Watt Mercury lamps. The prismatic reflectors give highest efficiency, and their smooth inner surfaces prevent permanent depreciation. Heavy-duty rugged construction guarantees safe, trouble-free operation.

LOW BAY LIGHTING

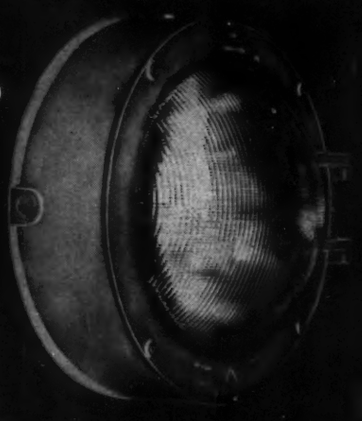
LOBAY* lighting with its variety of light distributions—concentrating, intensive and extensive—features prismatic reflectors for all kinds of light manufacturing. Designed with and without aluminum covers, these reflectors use Incandescent and Mercury lamps. The wide selection of light patterns produces highest illumination for any arrangement of machinery or equipment.



No. 645-AL

OUTDOOR LIGHTING

REFRACTOLENS* units, applicable for many outdoor uses, can be flushed in the wall or mounted on the surface. Their compound REFRACTOLENS, smooth on the inside surface with the prismatic optics sealed in an airtight chamber, give 180° lateral spread. Designed for Incandescent (100-1000 watt) and the 400 E-H1 Mercury, high illumination level is provided over large areas requiring wide spread of light.



No. U-850

Based on the economical operation of mercury in combination with incandescent lamps or mercury alone with incandescent stand-by, Holophane has developed HIBAY, LOBAY, and Outdoor Lighting Equipment designed for the severe conditions typical of steel mills and other heavy-industry plants. Twin and triple units are also available.

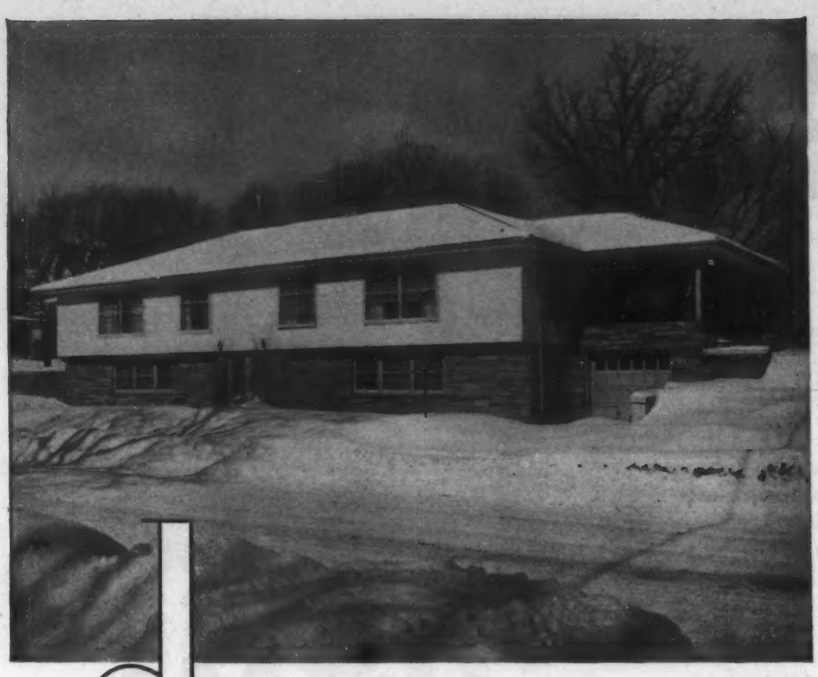
Holophane Trade Mark

*Reg. U. S. Pat. Off.

HOLOPHANE COMPANY, INC.

Lighting Authorities Since 1898 • 342 MADISON AVENUE, NEW YORK 17, N.Y.

THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO



durable stucco

Gives lasting beauty—from Minneapolis to Miami

Sparkling white, like the new snow around it, stucco dramatizes the clean lines of this Minneapolis bungalow. And through winter cold and summer heat, the white, crisp beauty of the stucco made with a matrix of Atlas White Cement will endure.

Builders have known for many years that a stucco exterior, properly made with an Atlas White Cement, will stand up in any climate. With Atlas White Cements, you get the full beauty of stucco, because they are true white cements. They make white stucco *snow-white* and enhance the delicate tones and values of pigments in colored stucco. Original and upkeep costs are low.

Atlas White Cements are available in three types: Regular, Waterproofed and Duraplastic* air-entraining. Atlas White Duraplastic Cement gives increased plasticity for easier application. It results in an even more durable stucco, yet costs no more.

For further information see SWEET'S catalog, sections 4E/7a and 13C/5 or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

*"*Duraplastic*" *is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.*

AR-S-20



FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO

NBC SYMPHONY SUMMER CONCERTS—*Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—June to September*

PRODUCTS

(*Continued from page 202*)

said to insulate for combined heat flow by radiation, convection and conduction. Infra Insulation, Inc., 10 Murray St., New York, N. Y.

Precast Concrete Slabs

Federal-Featherweight Precast Structural Concrete Slabs are said to offer low overall costs when used for roof decks on industrial, institutional or railroad buildings. The slabs are notched for speedy erection on steel roof purlins, and are claimed to provide structural strength along with light weight. Finished with a weatherproof covering, the



Notched, precast slabs feature light weight, rapid erection, durability

decks are claimed to be immune to the effects of weather, heat, smoke, cinders and fumes. No maintenance is said to be required once the roof is installed. The slabs have a flat, smooth underfinish, and reputedly have a definite insulating value. Federal Cement Tile Co., 608 S. Dearborn St., Chicago 5, Ill.

Cabinet Fittings

The simply-designed *Leco Handles* and *Leco-Latches* feature durability and ease of installation. The handles are die cast, with chrome or gold-type finish, and are available in three bar-like designs. Each requires only one screw for attaching and is fitted with anti-twist pins to prevent turning.

The two-piece latch, a permanent magnet and a small door plate, is claimed to hold doors firmly and to

(*Continued on page 208*)



☆ Start Production Sooner!
Mills Walls are delivered completely pre-fabricated, are erected with a minimum of labor in minimum time.

☆ Save Production Time!
Mills Walls can be moved overnight to fit changes in factory layout with no interruption of normal production.

☆ No Waste—All Parts Reused!
Every panel, unit and part can be used over and over again no matter how many times Mills Walls are moved.

MILLS MOVABLE WALLS

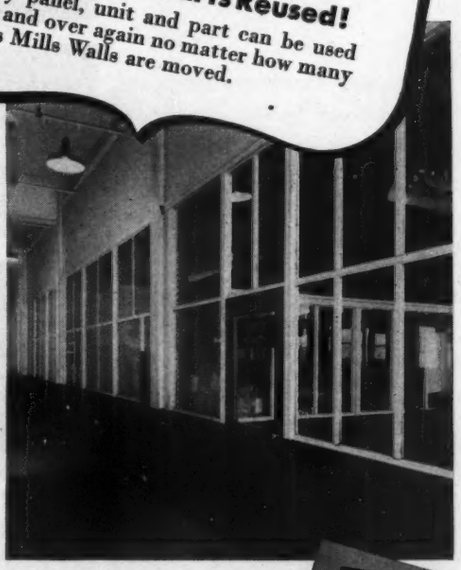
speed changeovers

FOR DEFENSE PRODUCTION

Mills Movable Metal Walls combine total flexibility with structural stability and solid construction. Perfected through more than 30 years of specialized experience, they are made in many different types to meet every plant operating requirement—

- **to create island enclosures and offices for supervisory personnel**
- **to form tool cribs, stock rooms, laboratories, test rooms**
- **to segregate departmental operations**

Mills Walls may be insulated and soundproofed as required. Their baked-on enamel finishes will not check or mar. They require no maintenance except ordinary washing at infrequent intervals.



MILLS *Movable* **METAL WALLS**



For complete information write for Mills Catalog No. 51. Upon request we'll gladly send specific recommendations to meet your particular plant requirements.

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you can offer your customers

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IN ALL THE NEW MODERN METHODS



HORIZONTAL WATER CIRCULATOR

with *THRUSH* forced circulating hot water heat

HEATING METHODS are on the march! Forced Circulating Hot Water Heat, which offers the mildest and most uniform heating, also permits the use of many new and modern heating methods not possible with other forms of heating. It is ideal for radiant heating in any form.

Thrush System gives precise control of temperature for hot water heating, completely eliminates wasteful overheating and assures that continuous feeling of well-being due to the constant presence of radiant heat.

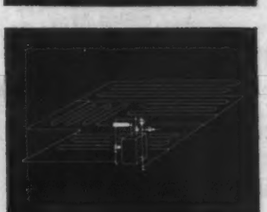
RADIANT CEILING PANELS

Thrush Controls are economical, in both installation and operating costs.



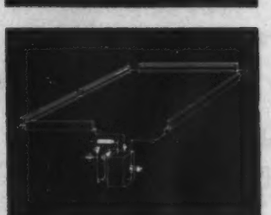
RADIANT FLOOR PANELS

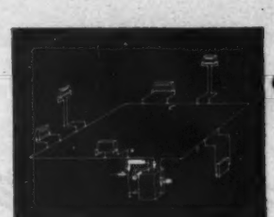
Thrush Controls provide continuous warmth with economical Circulator operation.



RADIANT BASEBOARD

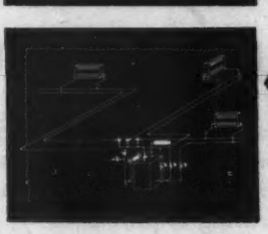
Thrush Controls maintain comfort, compensate for outdoor weather changes.





RADIATORS · CONVECTORS

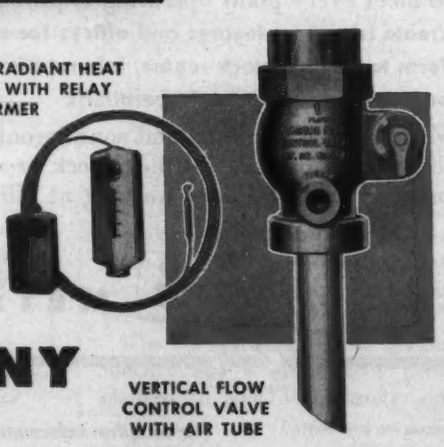
Uniform Heat is always present with Thrush Flow Control System on the job.



ZONE CONTROL

Inexpensive zoning with a Circulator, Flow Valve, and No. 201 Control for each zone.

NO. 201 RADIANT HEAT CONTROL WITH RELAY TRANSFORMER



VERTICAL FLOW CONTROL VALVE WITH AIR TUBE

See our catalog in Sweet's or write dept. J-7.

H. A. THRUSH & COMPANY

PERU · INDIANA



For lobbies and public areas where first impressions are created, Armstrong's Rubber Tile contributes outstanding floor beauty. The rich colors are enhanced by sharply defined marbleization. A new, exclusive Armstrong adhesive permits the installation of Armstrong's Rubber Tile Floors over grade-level concrete slabs.

Reception Lobby
Dr. Pepper Company, Dallas, Texas
Thomas, Jameson, & Merrill, Architects

ARMSTRONG'S RUBBER TILE

ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

THE ONLY FORM FOR
STEEL JOIST CONCRETE
FLOORS AND ROOFS

Corruform



CORRUFORM sheets are easily placed. Fasteners are positive for all common joists and beams. Lapping is automatic. No sag or material waste. Concrete is placed and finished by common practice.



CORRUFORM is nearly twice as strong as ordinary steel of equal weight. Tough tempered to spring back under abuse. Provides a secure form for trades and concrete — no side pull on joists, beams, or walls.



CORRUFORM is true and level. No cleanup necessary on floors below, no unsightly leakage. Bright, decorative corrugated pattern for exposed ceilings. Corruform is available plain, galvanized or vinyl-primed for painting.

SPECIFICATION

Standard weight Corruform with 2 3/16 inch wide, 1/2 inch deep corrugations. Weight .72 lbs. per sq. foot. Guaranteed average strength of 100,000 psi. — single test minimum strength 95,000 psi.

GRANCO STEEL PRODUCTS CO.
(Subsidiary of GRANITE CITY STEEL CO.)
Granite City, Illinois

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AIA FILE TODAY



PRODUCTS

(*Continued from page 204*)

work if doors sag or warp. There are no moving parts. The unit has a polished metal finish. Laboratory Equipment Corp., St. Joseph, Mich.

Telephone Answering Machine

The Electronic Secretary is a three-piece unit designed to not only take telephone messages but also to serve as a portable dictation machine. According to the manufacturer, the unit can be set



Automatic machine answers telephone and repeats or records messages

up to inform anyone phoning in, of the time his party will return. It is not connected into the phone instrument and is said to be easily installed. Electronic Secretary Distributors, Inc., 803 W. National Ave., Milwaukee 4, Wisc.

Static-Conductive Linoleum

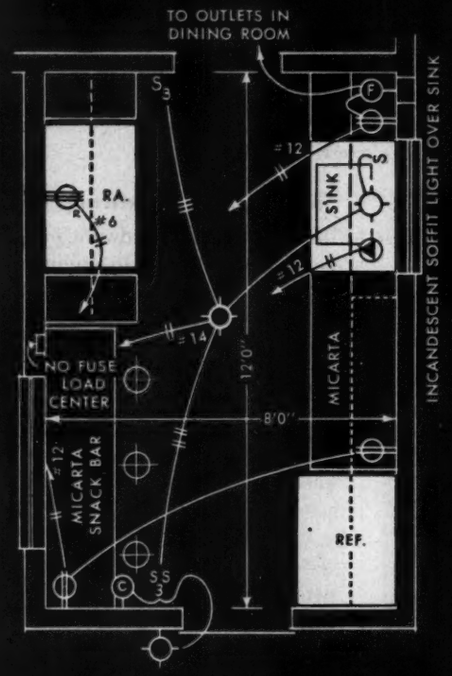
Nairn Static-Conductive Linoleum is said to be a non-sparking and highly static-conducting floor covering for use in hospitals and other areas where combustibility of mixtures of ether, solvent vapors or dust with air constitute fire hazards. At the same time, it is said to provide adequate protection against accidental grounding from service voltages. The manufacturer claims the linoleum to be wear-resistant, flexible, resilient, smooth and free from cracking, as well as being capable of enduring repeated washings with hot and cold water. It is said not to slough off or to wrinkle and buckle under ordinary conditions, and to be unaffected by common solvents. Freedom from brittleness is said to prevent the cracks that would either

(*Continued on page 210*)

DESIGN DETAILS

PLATE 5

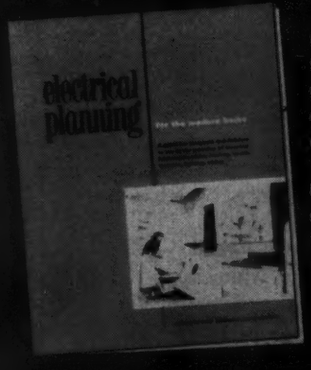
SMALL AREA KITCHEN WITH BIG CAPACITY



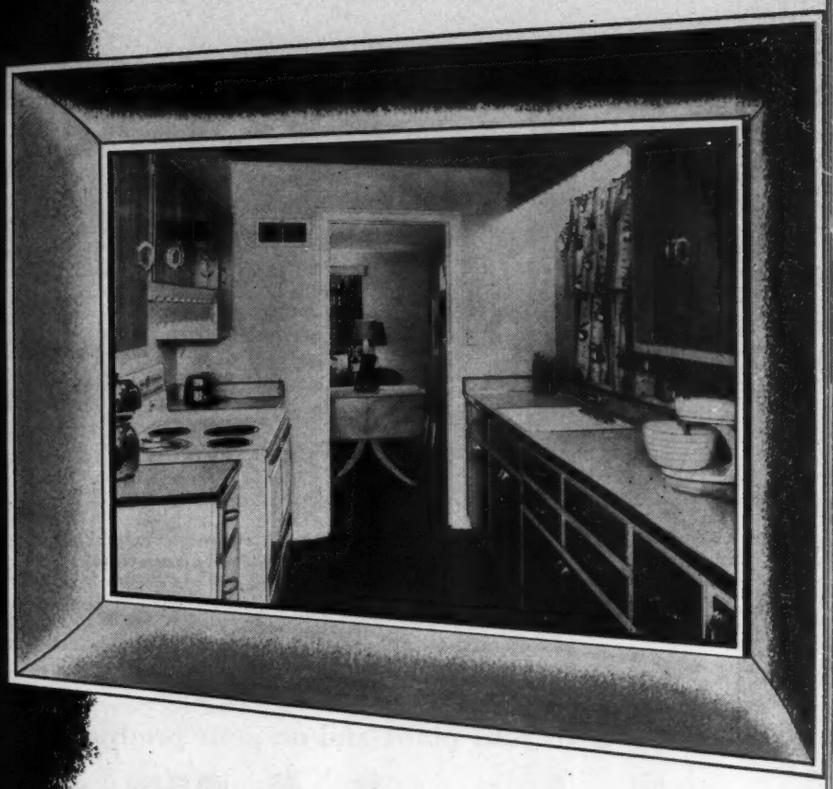
- CEILING OUTLET
- WALL OUTLET–EXTERIOR
- DUPLEX OUTLET
- RANGE OUTLET
- (F) FAN–POWERAIRE* = 10 PHV
- (C) CLOCK
- FOOD WASTE DISPOSER
- S SWITCH CONTROL

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



Kitchens are just one of the Electrical Living features that will add value and appeal to your homes . . others are Planned Laundries, Planned Lighting and Planned Wiring. All described in this 24-page booklet. Send for your FREE copy.



A two-wall kitchen . . . where economy is paramount

Where space limitations make it necessary to break the counter surface of a kitchen (generally considered undesirable for maximum efficiency), the two-wall kitchen illustrated is a space-saving layout. Installation cost is low, too.

Here, in 96 sq. ft., provision for snacks is made in addition to essential space for three standard work centers. The sink is equipped with a Westinghouse food waste disposer. A complete electric sink with Westinghouse dishwasher may be used, when desired.

The kitchen is wired for electric range and refrigerator, electric clock, ventilating fan and lighting, plus circuits and outlets for small appliances.

This is a typical example of a Planned Kitchen for Electrical Living. Westinghouse has complete technical information on Electrical Planning. Write for it.

J-10152

*T. M. Reg.

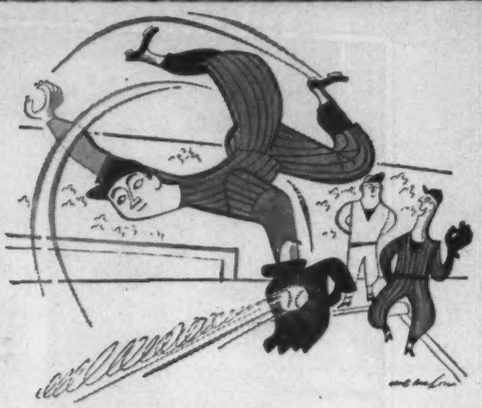
Better Homes Bureau
Dept. AR-7-51
Westinghouse Electric Corp.
P. O. Box 868, Pittsburgh 30, Pa.

Please send me a FREE copy of your book—"Electrical Planning for the Modern Home"—B-4760.

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For greater safety under foot, in your plant and on your products

Inland 4-Way® Safety Plate



Firesafe



Safe Footing



Easy To Fabricate



Easy Assembly

INLAND

INLAND STEEL COMPANY, Dept., AR-71
38 So. Dearborn St., Chicago 3, Ill.
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New Bulletin with New Ideas—Just Out! Bulletin Fl. Complete engineering and application data. Send for it!

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PRODUCTS

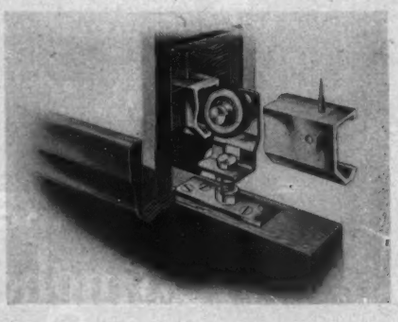
(*Continued from page 208*)

create isolated ungrounded areas or harbor explosive material. Installation is similar to that of conventional linoleum. The linoleum is black, with a thickness of ⅛ in. and approximate weight of 8 lb per sq yd. It is available in standard 6 ft widths. Congoleum-Nairn, Inc., Kearny, N. J.

Sliding Door Hardware

A new line of hardware for interior sliding doors features an aluminum track designed to serve either for single doors or for multiple by-passing doors. The *Harris track* can be mounted through either side or top flanges without any special mortising or shaping of the supporting members, says the manufacturer.

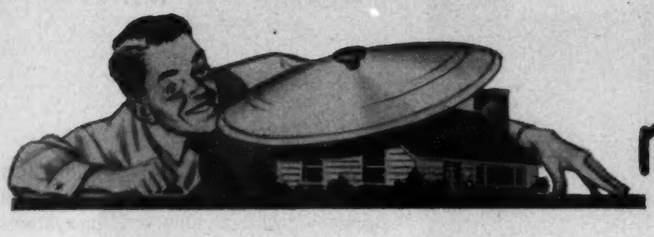
The company reports that this feature was developed to simplify stocking and handling both dealers and builders, as a single track and hanger assembly meets all normal requirements. Another advantage claimed for the track is the V-shape of the roller groove. This is said to keep the roller in alignment and to prevent dust and dirt from clogging the track and causing the roller to bind or bump.



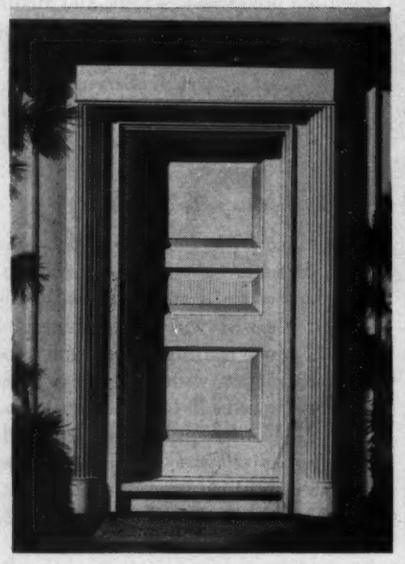
Sliding door track designed to serve single or multiple by-passing doors

The track is designed for installation on 1⅜ in. by-passing doors in a standard 5-in. wall. It is made of aluminum alloy and is available in standard lengths from 4 to 20 ft. The hardware is recommended for doors of any size or thickness weighing up to 100 lbs. Harris, Inc., 200 East Long St., Columbus 15, Ohio.

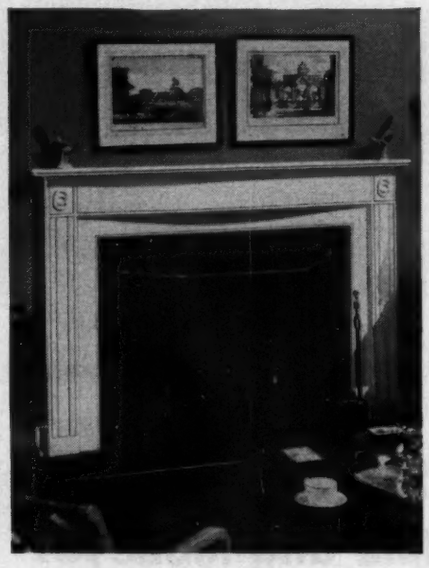
How to raise value *WITHOUT* raising the "lid"!



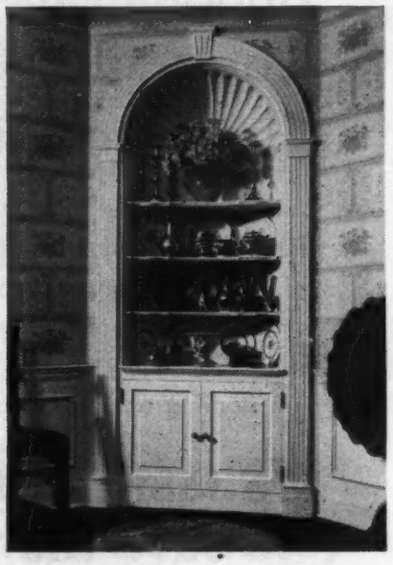
Even when there's a definite "lid" on home building costs, you can still increase eye-appeal—salability. The answer is Curtis Woodwork. It adds the extra distinction that means extra value—at a cost that fits comfortably into a modest building budget. Here are the reasons why:



It's hard to believe that this beautifully proportioned Curtis entrance with its fine detailing is so reasonably priced. This design—No. C-1742—shows why Curtis entrances provide more for the money. Frame is of durable ponderosa pine with oak sill, and consists of cap, jambs, casings, pilasters, architraves, plain or threshold sill and apron.



There's no need to forego the charm of a well designed mantel—if you choose a Curtis design. This mantel—C-6074—is of Colonial origin, but differs decidedly from those of the eighteenth century, reflecting the changes of our modern living. It follows that trend, without sacrifice of beauty and detail. The bowed fascia accentuates its charm.



Distinguished storage space is easy to provide—at modest cost—with a Curtis cabinet like this. The fibrous composition molded "shellback" may be painted a different color than the cabinet. There are three scalloped and molded edged shelves above counter and one in lower compartment. Made only for corner installation. Design C-6515.

You'll want illustrated literature describing Curtis Woodwork and Silentite Windows. Just mail the coupon!

Curtis makes a complete line of architectural woodwork and kitchen cabinets for the modern home. Make your next house "all Curtis."

1866 CURTIS WOODWORK

Curtis Companies Service Bureau
AR-7W Curtis Building
Clinton, Iowa

Please send me literature on Curtis Architectural Woodwork
I am ( ) architect, ( ) contractor, ( ) prospective home builder, ( ) student. (Please check above)

Name.....

Address.....City.....State.....



Haddon Hall Pattern (Basketweave) Flooring Again Available in Choice of Fine Hardwoods

Unavailable since 1942 due to material shortages, this authentic reproduction of the classic English Haddon Hall Pattern is again returned to the Parkay line. Dance floors, show windows, salons, residences, apartments and hotels can now enjoy the beauty of this world-famous basketweave pattern flooring at only a fraction of its original cost.

Pre-fabricated and Pre-finished to Save You Time and Money

Parkay Haddon Hall flooring is factory assembled in 12″x12″ beveled edged units composed of 2″x4″ and 2″x2″ solid blocks ¼″ thick. Each unit is then finished by proven factory methods to insure a uniform and lasting finish. Flooring is applied to any sound, smooth subsurface —solid wood, plywood, concrete, terrazzo—with Special Parkay Adhesive. Choice of five woods—light and medium finish Oak, Walnut, Avodire, Mahogany and Teak. Write for descriptive literature. Parkay, Inc., Louisville 9, Ky.

PARKAY
READY-FINISHED HARDWOOD FOR FLOORS AND WALLS

LITERATURE

(*Continued from page 164*)

Snow Melting Systems

Byers Wrought Iron For Snow Melting Systems. Bulletin discusses uses and features of radiant snow melting systems employing wrought iron pipe. A number of typical installations and piping layouts are illustrated, including loading areas, ramps, sidewalks, driveways and highways. Sections of the text are devoted to: basic design principles, piping properties, use of anti-freeze, paving design and fill, fabrication and installation, installing and operating costs, operating practices, controls, and auxiliary units. Several tables of pertinent data are included. 36 pp., illus. A. M. Byers Co., Engineering Service Dept., 6th and Bingham Sts., Pittsburgh, Penn.*

Precast Concrete Slabs

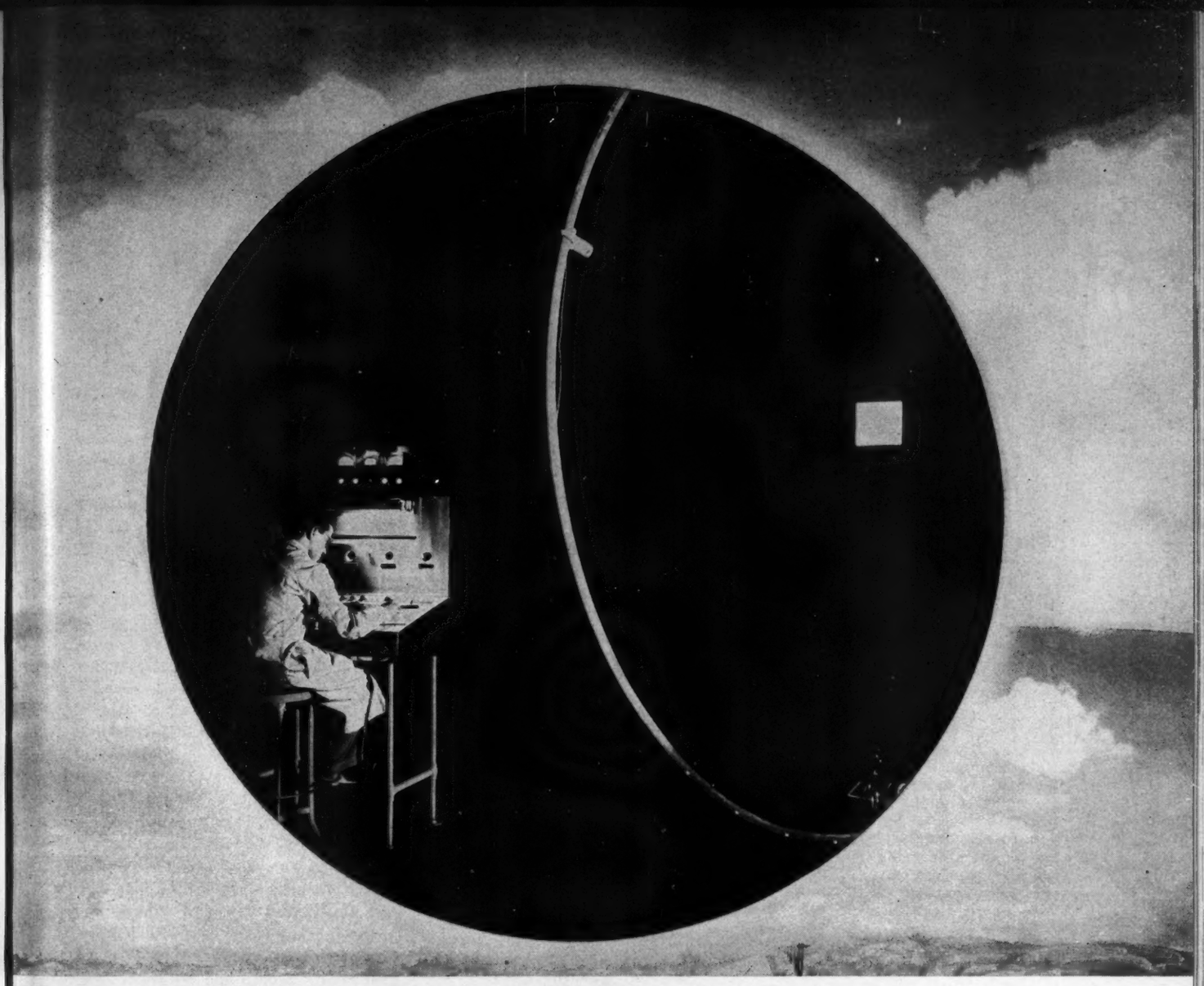
Long Span Flexicore, for Floors and Roofs. Brochure describes possible installations of slabs and includes details on their use with wiring, plumbing and radiant panel heating. Floor and roof slab construction with masonry or steel frame is described. Charts give loads, and a table of sizes is also provided. Photographs show typical installation and step-by-step procedures. 8 pp., illus. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.*

Color Under Artificial Light

Color Is How You Light It (*No. FL-420*). Booklet gives an analysis of how a color will look under any of the eight colors of white artificial light now available. Swatches of 40 colors are included, with notes on their appearance under the different lights. Material is also included on color definitions, color applications, light and color, correlation of source and surrounding color, color psychology, and color in industry, merchandising and the home. 24 pp., illus. Price 50 cents. Sylvania Electric Products Inc., Advertising Dept., 87 Union St., Salem, Mass.*

(*Continued on page 214*)

** Other product information in Sweet's File, 1951.*



Operator can set both artificial sun and traveling photocell to any angle or altitude and recd resulting light value. All controls work automatically: Readings are taken at high speed and can be recorded electrically.

He makes "Daylight" to order for Daylight Engineering study

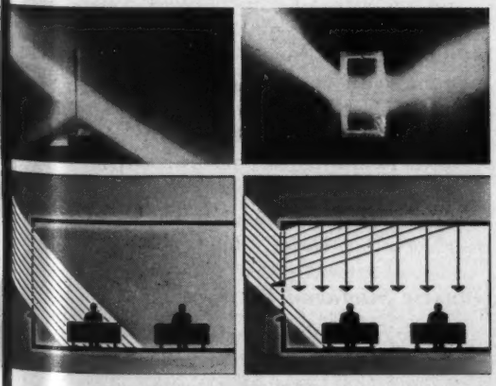
What happens in a building when the "sun" shines on a light-directing block is measured by the photocell traveling on this hoop. On the other side of the glass block shown in the picture an artificial sun can be set to simulate daylight conditions in any season in any geographical location at any time of the day.

These tests are part of the research-in-daylight program at the Daylighting Laboratory, Engineering Research Institute, University of Michigan, where special projects are set up to study methods of obtaining best quality daylight . . . how to make it do a better lighting job.

One significant better-daylighting result is the development of Insulux Light Directing Glass Block No. 363. This new block controls light so efficiently that a building virtually "turns with the sun." Entire glass areas transmit free daylight from early morning to late afternoon.

A Daylight Engineer will be glad to show you the benefits the new Insulux Glass Block® can bring to your structures. Just write: Daylight Engineering Laboratory, Dept.AR7, Box 1035, Toledo 1, Ohio . . . Insulux Division, American Structural Products Company, Subsidiary of Owens-Illinois Glass Co.

INSULUX GLASS BLOCK



Direct sun causes uncomfortable brightness near windows, extreme contrast in other parts of room. Insulux Fenestration directs and spreads daylight to ceiling, keeps brightness at comfortable levels.

INSULUX FENESTRATION SYSTEMS

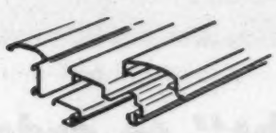
—by the leaders of Daylight Engineering



Whatever your problem, get expert help from Reynolds Architectural Aluminum Service

Near to you as your telephone, a Reynolds Aluminum Specialist is ready and waiting to work with you on any design problem. He has the experience and show-how to help you get the maximum benefits from aluminum...the most versatile architectural metal.

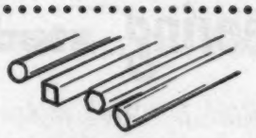
Even though the supply of aluminum for building is limited now, the assistance of Reynolds Architectural Service is still yours for the asking. For complete information, call the Reynolds office listed under "Aluminum" in your classified telephone directory.



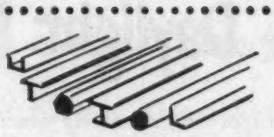
EXTRUDED SHAPES



SHEET



TUBULAR PRODUCTS



STRUCTURALS

FREE BOOKLET!

Send for your copy of Reynolds Architectural Folio today! A complete, up-to-date kit on architectural aluminum, in loose leaf form. Free when requested on business letterhead. Write to Reynolds Metals Company, 2572 South Third Street, Louisville 1, Ky.





ORNAMENTAL CASTINGS produced to your specifications by independent foundries from Reynolds Aluminum ingot.

REYNOLDS METALS

REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

Architectural Engineering

LITERATURE

(*Continued from page 212*)

Perimeter Insulation

The Story of Perimeter Insulation for Standard Heating Systems. Booklet compares, by means of drawings, the relative heat losses with and without perimeter insulation. It also gives step-by-step instructions for installing and shows three types of insulation available. 20 pp., illus. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.*

Interior Furnishings

• *Raymor Modern in the Tradition of Good Taste.* 1951 Catalog pictures many of the new lamps available, as well as tables, magazine racks, clocks, fabrics and ceramic ash trays. Dimensions, colors and prices are given. 20 pp., illus. Richards Morgenthau Co., 225 Fifth Ave., New York 10, N. Y.

• *Dunbar for Modern.* Consumer booklet includes newest additions to Dunbar line, such as the daybed sofa, footstool bed and Edward Wormley's adaptation of the Windsor chair. Also included are Wormley's newest designs in the "American Style." Lamps and wallpapers are also illustrated. 32 pp., illus. Price, 25¢. Dunbar Furniture Corp. of Indiana, Berne, Ind.

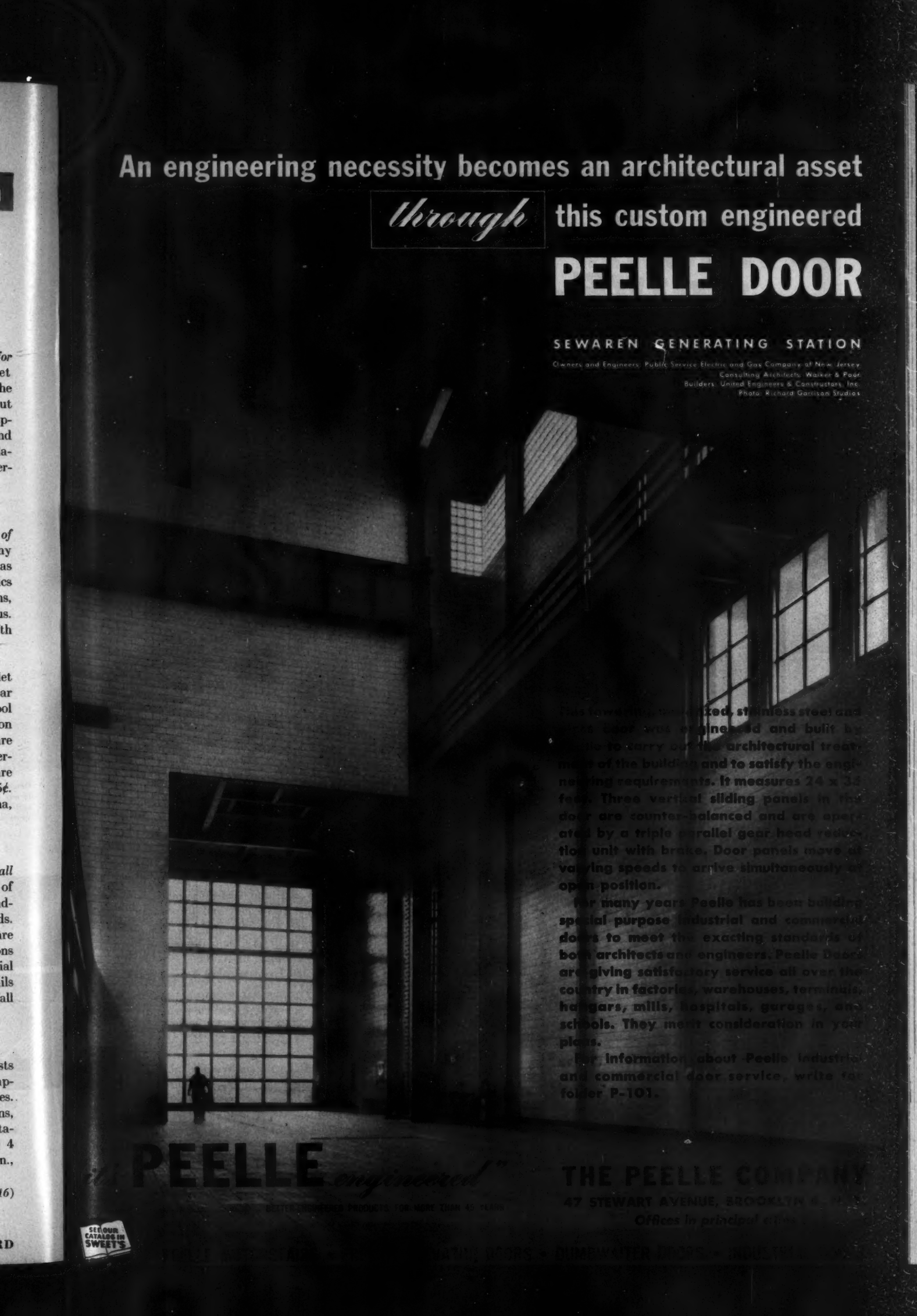
Wall and Ceiling Panels

Marlite Modern Plastic-Finished Wall and Ceiling Panels. Catalog lists a line of wall and ceiling panels, moldings, adhesives, polish and caulking compounds. The 63 available patterns and colors are also shown as well as recent installations in both residential and non-residential types of building. Installation details are included. 8 pp., illus. Marsh Wall Products, Inc., Dover, Ohio.*

Plastic Surfaced Plywood

Plastic Surfaced Plywood. Folder lists characteristics of panels, suggested applications and installation techniques. Photographs show typical installations, including office buildings, gasoline stations, freight cars and food stores. 4 pp., illus. Douglas Fir Plywood Assn., Tacoma Bldg., Tacoma 2, Wash.*

(*Continued on page 216*)


An engineering necessity becomes an architectural asset
through this custom engineered
PEELLE DOOR
SEWAREN GENERATING STATION
Owners and Engineers: Public Service Electric and Gas Company of New Jersey
Consulting Architects: Walker & Poor
Builders: United Engineers & Constructors, Inc.
Photo: Richard Garrison Studios
and to satisfy the engi-
architectural treat-
sliding panels in the
counter-balanced and are oper-
parallel gear head reduc-
brake. Door panels move at
speeds to arrive simultaneously at
position.
many years Peelle has been building
purpose industrial and commercial
to meet the exacting standards of
architects and engineers. Peelle Doors
giving satisfactory service all over the
in factories, warehouses, terminals,
mills, hospitals, garages, and
They merit consideration in your
information about Peelle industrial
commercial door service, write for
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Offices in principal cities
SEE OUR CATALOG IN SWEET'S

This fellow needs DRIVE-IT!





-and SO DO YOU for fastening steel or wood to concrete or steel . . .

Pity the man who is still using old-fashioned "dig and drill" methods for fastening steel or wood to concrete. He's wasting *his* time and *your* money.

DRIVE-IT powder-powered tools were designed especially to do such fastening jobs in a split-second—and at a great saving in time and money.

Now, especially, with help becoming harder to get, it will pay you to investigate the DRIVE-IT method of fastening. There's a tool for light work and one for heavy work—each approved by the Underwriters' Laboratories.

For the whole story on DRIVE-IT call your DRIVE-IT representative—or write us direct.



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THE POWDER POWER TOOL CORPORATION

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Cleveland Branch: 2075 E. 65th St., Cleveland, Ohio
Canadian Distributor: Ammo Power Tool Co., Ltd., Vancouver, B. C.

APPROVED BY UNDERWRITERS' LABORATORIES



LITERATURE

(*Continued from page 214*)

Acoustical Tile Supports

Securilee Systems. Booklet gives detailed drawings of a line of support systems for acoustical tile. Directions for attaching and dimensions are also shown. 8 pp., illus. W. J. Haertel & Co., 832 W. Eastman St., Chicago 22, Ill.

Insulated Cavity Wall

SCR Insulated Cavity Wall. Technical Notes on Brick & Tile Construction. Vol. 2, No. 5. Folder lists features of brick and tile cavity walls which are insulated with a new fibrous type fill. Developed as a result of tests conducted by the Structural Clay Products Research Foundation, the insulation properties of the wall, its resistance to moisture penetration, resistance to heat loss and construction techniques are described. Drawing shows component parts and photographs of test walls are included. 4 pp., illus. Structural Clay Products Institute, 1520 18th St., N. W., Washington 6, D. C.*

Fire Stations

Fire Station Design (Volume 3). New edition of booklet presents 66 American and Canadian engine houses, mostly with plans, exterior views and brief descriptions. A section is devoted to fire station planning. The designs covered include one- and two-story plans, and combined town hall and fire stations. Notes are also included on uses and features of dryers for clothing and fire hoses. 52 pp., illus. The Circul-Air Corp., 569 E. Milwaukee Ave., Detroit 2, Mich.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Don Hatch, Apartido 1944, Caracas, Venezuela.

Hare & Hatch, Architects, 125 Broad St., New York 4, N. Y.

Reiner C. Nielsen, Architect, 5151 Southwestern Ave., Los Angeles 62, Calif.

The Whitest White
is Universal·Rundle



Here's "white" quality that customers can see —*nationally* advertised by U/R!

Arctic White bathroom fixtures by Universal-Rundle are literally in a class by themselves—no others can match the flashing snow-white of these world's finest bathroom fixtures: actually *whiter* by scientific test, than any other white fixtures on the market!

We'll Tell the World! To show off the dazzling beauty of the world's whitest white, Universal-Rundle's big, colorful advertising in THE SATURDAY EVENING POST and BETTER HOMES & GARDENS features decorator-designed bathrooms by Ving Smith, famous New York designer and decorator. (Other advertisements will spotlight U/R's famous colorware.)

Catalog celebrates 50 years of Quality! New U/R Catalog shows the complete line of bathroom and kitchen fixtures. Gives plans, drawings, roughing-in specifications, and a world of help for everyone who sells, installs, recommends or specifies fixtures. Write today on your letterhead. (You can also see the new Universal-Rundle catalog in Sweet's Builders File!)

Color on the beam!—The units of a U/R colorware suite match closer than the human eye can see!

The strongest bond between surface glaze and body in U/R fixtures, means highest resistance to chipping.

"Harder than steel" surfaces are easy to keep clean, scratch-free, and sparkling bright in U/R ware.

Who is Universal-Rundle? U/R is the half-century young pioneer of many industry "firsts"; colored vitreous china, one-fire tunnel-kiln firing, complete laboratory control of production, and many others.

Plants in Camden, N. J., Milwaukee, Wisc., New Castle, Pa., and Redlands, Calif.

Universal·Rundle

UNIVERSAL-RUNDLE CORPORATION, DEPT. 6, NEW CASTLE, PENNSYLVANIA


Imagination and practical planning a

...ing a striking coliseum



The University of Kentucky Memorial Coliseum,
Lexington, Kentucky.
Proctor-Ingels, electrical engineers.



...hn T. Gillig



...gh Meriwether



Ernst V. Johnson

Only architects with imagination could have conceived the bold, simple design of the University of Kentucky's Memorial Coliseum at Lexington. Only architects with foresight could have transformed this design into such a strikingly modern, completely functional field house and auditorium seating 13,000 people. Working together, three men from Lexington did the job—and left an architectural milestone.

But Mr. John Gillig, the senior architect, who supervised the entire project, Mr. Ernst Johnson, who did the architectural design work and Mr. Hugh Meriwether, who assisted the planning and wrote the specifications, know that the practical architect is also a practical businessman—whose job is to get full value from every dollar that goes into a building. And, being practical, they are great believers in quality . . . wherever quality means better performance and longer service life.

That's why it is interesting to note that these architects selected Day-Brite fixtures to light the main foyer and concourse, the ramps, offices, lounges and corridors of this well-lighted Coliseum. These architects realized that Day-Brite's initial cost would quickly be offset by lower installation, maintenance and operating costs. But, regardless of cost, they were determined to have this building illuminated properly—with the best lighting fixtures on the market.

The wide Day-Brite line contains fixtures that are designed for all kinds of building projects . . . and *every* Day-Brite fixture sold is guaranteed to offer top-quality performance at reasonable cost. Are *you* familiar with Day-Brite?

Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Missouri. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario. Distributed nationally by leading electrical wholesalers.

121

...e towering expanse of the foyer is lighted by Day-Brite glass-enclosed troffers.



Day-Brite Boxco Troffers flood the main concourse with glareless illumination.





WASHINGTON (*Cont. from p. 27*)

moaned the fact that a series of government controls imposed over home sales "have eliminated many thousands of prospective buyers from the market." They are convinced that action by the Federal Reserve Board in withdrawing its support of the government bond market led to the present crisis in mortgage loans.

At the same time, N.A.H.B. went before Congress to explain that Regulation X, another basic cause of their troubles, was keeping the average veteran or moderate-income family from entering the market for housing. This had its restraining effect as well on the architect who specializes in small house design.

Spokesman for the association was E. M. Spiegel of New Brunswick, N. J., N.A.H.B. second vice-president, who is a large developer in his own right. He told the Senate Banking Committee that under present controls the country is heading right back into a serious housing shortage; a shortage that may be more acute than the post-war dearth which required five years to overcome. Said Spiegel:

"As long as materials and labor are available, the construction of housing for the average man is not in any way inflationary. Our best opinion is that for some time to come, labor and materials will be more than ample to meet the volume of production which we can foresee."

Unless the government controls were either eliminated or relaxed, housing production this year could drop to a mere 700,000 new units, Mr. Spiegel contended. He disagreed strongly with some government sources quoted as saying 1951 housing starts will reach 1.2 million. Meanwhile, the Federal Reserve Board and the Housing and Home Finance Agency have shown no disposition to relax their controls, which are aimed at a total housing volume of 850,000 units in the calendar year of 1951.

But the breach between government and industry on this subject was widening. The home builders claimed that conditions are forcing them to lay off employees in large volume.

"Decisions which are being made today will be reflected in housing statistics from four to six months from now," said Mr. Spiegel in his arguments to Congress. "When the substantially reduced rate of starts becomes obvious to everyone it may be too late to re-establish this industry to the point where housing in reasonable volume can be built.

"Organizations will have been disbanded, crews scattered, and materials manufacturers and distributors will have cut back to meet the reduced demand for their products."

Unemployment Crisis Seen

It was estimated that a drop of 600,000 units from last year's high figure — to 800,000 units in 1951 — would cause unemployment for approximately 425,000 men. And the jobs of an additional 75,000 men would be sacrificed for each additional drop of 100,000 starts.

Continued government controls reducing housing output also would play havoc with the trained pool of veterans entering the building trades since V-J Day, it was claimed. Widespread unemployment would disperse this skilled pool which has been built up over a period of years. These men would have to be re-

(*Continued on page 222*)

FACTS FOR ARCHITECTS

ABOUT "CONSTRUCTION BY ADHESION"*

HERE ARE NEW METHODS WHICH MEAN SUBSTANTIAL SAVINGS IN LABOR AND MATERIALS FOR MODERN CONSTRUCTION in both NEW building and MODERNIZATION

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214 E. 53 St. • New York 22, N. Y.
"CONSTRUCTION BY ADHESION"
*Reg. U.S. Pat. Off.

WRITE TODAY FOR RECOMMENDED SPECIFICATIONS ON
1. Setting Genuine Clay Tile. 2. Insulating Ducts. 3. Insulating walls and ceilings either by Direct Adhesion or in conjunction with Surface Anchors. 4. Installing floor runners; bonding furring strips.

1.



Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 144 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.

2.



Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE ADHESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson. BUILDER, Turner Construction Co.

3.



FIBERGLAS insulation, Type PF-613, 2" thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.

4.



WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

VISIT MIRACLE EXHIBIT AT ARCHITECTS SAMPLES CORP. 101 PARK AVE., NEW YORK CITY

CRANE

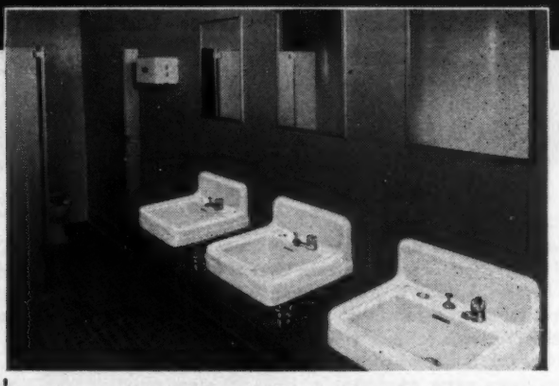
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FIRST BAPTIST CHURCH

LONG BEACH, CALIFORNIA



Yes, Crane is the *preferred* plumbing in churches, too! It is selected for its modern design, lasting beauty and high quality. And when it comes to maintenance costs, Crane plumbing is a great respecter of church budgets.

Among the exclusive advantages of Crane plumbing are the *Dial-ese* controls that turn with finger-tip pressure, thus reducing wear and consequent dripping. For your clients' satisfaction through the years, always specify Crane, the *preferred* plumbing. Consult your Crane Branch or Crane Wholesaler.

CRANE RHODILE—Chosen by architects and builders for its simple, modern design. Crane quality porcelain enameled cast iron. Spacious rectangular basin and 6-inch high back. Exclusive *Dial-ese* controls. Size 20 x 18 in.

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VALVES • FITTINGS • PIPE
PLUMBING AND HEATING

WASHINGTON (*Cont. from p. 220*)

trained to other skills since most building trade workers are not readily adaptable to other kinds of defense production. So the arguments ran.

Congress was begged not to extend the present credit controls (limited to new transactions) to all existing housing. Such a move could be disastrous, it was thought, bringing "an already thoroughly confused mortgage finance situation to almost complete chaos."

N.A.R.E.B. Joins Attack

The National Association of Real Estate Boards joined in the attacks on proposed changes in the Defense Production Act of 1950. President Alexander Summer of Newark, N. J., took the position that federal agency officials have used their sweeping powers over the real estate economy to prevent the solving of this country's real housing problems.

Going considerably farther than his fellow industry spokesmen in attacking federal policies, Mr. Summer testified before the Senate Banking group as follows:

"With a sorry record in handling its drastic controls over housing, government controllers are now demanding sweeping new powers that would permit them to take any kind of property in the U. S. that they decided they need. They could take, build or operate any quantity of housing, retail business, industries, schools, hospitals, or anything else. This power is so wide open that it could be used to socialize any industry — or all industry — over night.

"Congress should limit this power to the construction and operation of those types of plants with special and unusual characteristics that would prevent financing through existing credit sources."

Hill-Burton Approvals at 1524

A first quarter report from the U. S. Public Health Service showed that as of April 1, 1524 hospital and health center construction projects had received approval under the Hill-Burton Act as amended. A consolidated summary disclosed that 429 of these were in operation as of that date; 875 were under construction, and another 220 had been given initial approval.

The estimated total cost of all projects in the program through the first quarter of this year was given as $1,105,510,126. The federal government planned to pay approximately one third of this, or $402,114,896, under terms of the Hill-Burton law. This construction was on the way to adding a total of 73,118 beds in non-profit hospitals and 233 health centers to the nation's inventory.

The sum of $179,386,167 has been invested in the hospitals and health centers completed and in operation. The 875 under construction April 1 represented an outlay of $738,307,497, and an additional $187,816,462 was being poured into the 220 jobs in the initial approval status.

(*Continued on page 224*)



A. B. Dick Co., Chicago, Illinois
The Austin Co., Engineers & Builders

with COOLITE Heat Absorbing and Glare Reducing GLASS

7,954 square ft. Coolite, Heat Absorbing and Glare Reducing Glass in A. B. Dick Co. factory floods working areas with softly diffused daylight.

Conversion to a defense economy calls for improved quality and quantity of production... fewer rejects. One of the essentials for efficient operation in industrial plants is good lighting. In admitting only eye-soothing daylight, Coolite, Heat Absorbing and Glare Reducing Glass improves ease of vision, reduces fatigue and eye strain, decreases accidents. By absorbing and reradiating much of the sun's heat, interiors are cooler... working conditions more comfortable. Humidification and air conditioning equipment perform better and more economically. For increased production, less turnover and improved morale, specify the distinctive blue glass with the slightly-greenish cast... Coolite glass by Mississippi. At leading distributors of quality glass.



Send for new catalog, "Coolite Heat Absorbing and Glare Reducing Glass."

For further data see Sweet's Architectural File. Samples on request.

Rolled, Figured and Wired Glass by Mississippi is "Visioneered" for better daylight illumination. Available in a variety of patterns and surface finishes, all scientifically designed to distribute light to best advantage.

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WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

New Heavy-Duty Industrial Floor

by the world's largest maker of hardwood floors

TOUGH, DURABLE HARDWOODS (Hickory and Pecan)

EXTRA THICK (33/32 INCH) (Tongued and grooved)

TOXIK* PRESERVED (For durability and to stop termites and rot)

INSTALLED IN MASTIC OVER CONCRETE

*Trademark



DURA-WOOD BLOCK FLOORS have big advantages for owners and workers

Durable - Economical

Dura-Wood Blocks are made of tough, long-wearing Hickory and Pecan . . . close grained, heavy hardwoods that resist wear and abrasion. A floor of this type will last indefinitely. It is less subject to damage than most floors, and can easily be repaired.



← Simple installation

Prefabricated blocks are laid in mastic over concrete slab. No finishing is needed, as the Toxik treatment is preservative and protective. For added beauty, floor can be given a light sanding and penetrating seal finish after installation.

Less tool damage →

Plant engineers report far less damage to tools and machined parts when accidentally dropped on wood floors than on concrete or other hard surfaced floors. This is often a sizeable expense item. There's less wear and tear on power trucks and other rolling equipment, too.



Less fatiguing

Workers find these hardwood floors far more comfortable underfoot—much less fatiguing than unyielding, hard-surface floors. They are warmer in winter . . . more healthful and fewer colds.

No powdering

Dura-Wood Floors don't powder or dust, thus eliminating a source of discomfort and irritation to workers. No abrasive dust to get into machines or machined parts. Simpler, less expensive floor maintenance.

E. L. BRUCE CO., MEMPHIS, TENN.

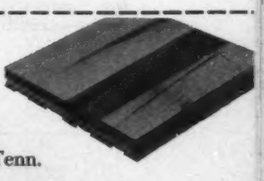
BRUCE *Dura-Wood*

BLOCK FLOORS

Bruce also makes 25/32" Dura-Wood Blocks and 25/32" and 33/32" Dura-Wood Strip Flooring

BRUCE

MAIL FOR LITERATURE



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1622 Thomas St., Memphis 1, Tenn.

Send us literature and complete information on Dura-Wood Blocks for industrial floors.

Name_____

Address_____

City and State_____

This program continued to bring its greatest benefits in hospital construction to the southern states, though every state shared to some extent. Georgia, for example, had 86 projects under the law; North Carolina, 81; South Carolina, 106; Texas, 88; and Louisiana, 52. The larger states were doing well, too: California with 47 projects altogether, New York with 63, and Pennsylvania with 48.

The Hill-Burton program entails reconstruction of hospitals as well as new building. It embraces the following categories: general hospitals, T. B., mental, chronic, public health centers, auxiliary public health centers, general and public health centers, state health department laboratories, and adjunct services.

ECONOMICAL SHOWER BATHS



3-And 5-Stall Models





Important In Modern Plant Operation

Bradleys Are Multi-Stall Showers That Cut Installation Costs

Because more men and women are employed in industry, the problem of sanitary wash facilities is of primary concern. In addition to Bradley Washfountains, modern employee sanitary conveniences require that Showers be available also. Bradley Multi-Stall Shower Units are companions to the Bradley Washfountains which are standard equipment in numerous industrial washrooms.

Multi-Stall Showers come in 3-and 5-Stall Units, with or without receptors. One 5-Stall Unit with one set of plumbing connections—two supplies, one drain—accommodates five users simultaneously. These economical Shower Units come partially assembled; therefore considerable savings in installation labor are realized. Further savings in lower water consumption and maintenance add to the advantages of a Bradley Multi-Stall installation. These units can be quickly mounted on any type of floor including wood.

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2227 W. Michigan Street,
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Send for interesting, fact-filled Catalog 4701. Write today.

Distributed Through Plumbing Wholesalers

BRADLEY *multi-stall showers*



Costs: Methods vs. Labor

Materials comprise from 40 to 50 per cent, and labor a little more than 30 per cent, of the cost of building new water and sewer systems. This breakdown comes from a Bureau of Labor Statistics survey in which the U. S. Public Health Service joined. Engineers' reports on a sample of 200 projects built in 1948, 1949, and 1950 formed the basis for calculating distribution of expenditures per million construction dollars, for the labor, materials, and supplies needed to build the projects and for overhead, profit and equipment charge.

Materials, said BLS, accounted for half the total for building new water works. The proposition was the same for either treatment plants or distribution lines. One fifth of all outlays for water treatment plants was spent for key metal products — pipe, fittings and reinforcing steel — 15 per cent for metal-using machinery and equipment to operate the treatment process, and 10 per cent for premixed concrete. A third of the cost to build the lines was for metal products, largely pipe and fittings, and about 10 per cent for cement asbestos pipe and other stone, clay or glass products.

Further BLS and USPHS findings:

Materials cost for new sewer works were somewhat less than for water supply systems, amounting to over two fifths of total outlays. Labor costs were about the same as for water works, however — a little over 30 per cent. There was much less expenditure on sewage disposal systems for the presently critical metal products, and much more for cement, clay and stone products. This reflects primarily the use of clay and concrete pipe on sewage lines instead of the metal pipe and fittings most prevalent in water lines.

A substantial amount of sewage treatment plant construction expense was for machinery and equipment to operate the works, an item that is very minor in the case of the sewage collection lines. Other materials expenses were fairly similar for the two parts of the sewage disposal system.

Finally, on account of the deeper and more extensive excavation needed for installation of sewage pipes, charges for the use of construction machinery were a much more significant item of expense

(*Continued on page 226*)

AIR CONDITIONING SYSTEMS *for* BUSINESS AND INDUSTRY



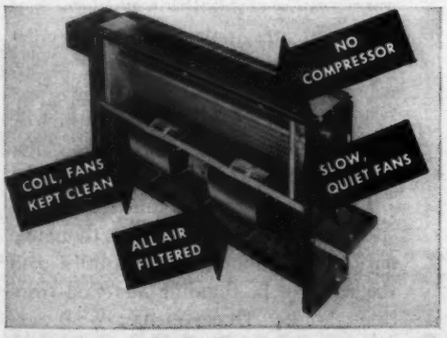
NEW DUN & BRADSTREET BUILDING in New York City has G-E Personal Weather Control Air Conditioning. Over 450 G-E room units circulate filtered, fresh air that is cool in summer, warm in winter. Architect: Reinhard, Hofmeister, & Walquist. Consulting engineer: Syska & Hennessy, Inc. General contractor: George A. Fuller Company. Air conditioning contractor: Kerby Saunders, Inc.

Cut first cost...and save in the long run, too, with

G-E PERSONAL WEATHER CONTROL



NO COMPRESSOR IN ROOM UNITS, just quiet, velvet-smooth fans and G-E motor. Room occupants can set temperature as they like without disturbing others. Units are supplied with attractive cabinets (above) or can be concealed in walls. Windows are never blocked.



ALL AIR FILTERED, protecting coils from dust which cuts performance drastically. Filters — inexpensive, changed in less than a minute—reduce room cleaning, avoid costly coil cleaning. Nine-inch deep unit takes little space, circulates air gently through large area.

HERE IS an air conditioning system that in most cases costs less to install...and goes on piling up savings for its owner through many years of operation.

It's General Electric Personal Weather Control, which heats in winter and cools in summer...utilizing individual G-E room air conditioners supplied with hot or chilled water through simple pipe runs from a central heating and refrigeration plant.

HOW YOU SAVE...Valuable space can be saved and alterations can be avoided by supplying ventilation through small-size ducts, the method used in the new Dun & Bradstreet Building (above) in New York City. Installation costs can be reduced even further by installing these systems with no ducts at all...using wall apertures for fresh air.

G-E Personal Weather Control often requires substantially less compressor capacity, saving both installed and operating cost. When rooms are unoccupied, units can be shut off. When there are few people in the building or the system is being started in the morning, units can be operated without the expense of running ventilation equipment.

MAKES YOUR BUILDING MORE PROFITABLE...Tenants enjoy living or working in buildings air conditioned by G-E Personal Weather Control. Each tenant can set the temperature of his room without disturbing others. And it's easier to rearrange office space, because G-E room units are flexible.

It's no wonder that G-E Personal Weather Control Air Conditioning is installed in Houston's Sterling Building ...12 Sheraton Hotels...the prominent new 575 Madison Avenue Building in New York City...and other leading buildings all over the United States.

GENERAL ELECTRIC

FREE DATA to architects, engineers, builders, contractors, and building owners.

General Electric Company, Air Conditioning Dept., Sec. AR-9, Bloomfield, N. J.

Please send me, without obligation, detailed information on G-E Personal Weather Control Air Conditioning.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

WASHINGTON (*Cont. from p. 224*)

for construction of sewage collection lines than for any of the other parts of the water supply and sewage disposal systems.

Stabilizing Building Wages

The Wage Stabilization Board has established a new 12-man tripartite commission to administer wage stabilization in the building and construction industry. It is expected the new body will function in much the same manner as the old construction industry wage stabilization board of World War II.

The jurisdiction of the new commission extends to all wages and salaries paid to mechanics and laborers in the building and construction industry and "employed directly upon the site of the work." Covered are the constructing, altering, remodeling, painting and decorating installations, such as building, bridges, highways and similar projects. The commission's jurisdiction does not extend to employees whose work, though connected with building and construction projects, is non-manual or not performed directly and primarily at the site of the project. Examples are executive, administrative, technical, and clerical employes, and manual employes working in shops away from the site. This would obviously exempt architects from the commission's role.

The commission is to be composed of four public, four industry, and four labor representatives. It will function as an arm of the national Wage Stabilization Board and in so doing will conform to regulations, policies, orders and decisions of the board in stabilizing wage rates in the building and construction field.

The Secretary of Labor came into the picture importantly because of the Davis-Bacon Act which directs him to determine wage rates for federally-financed construction projects.

In a letter to George W. Taylor, chairman of the WSB, Secretary Tobin stated:

"In furthering the stabilization effort by the board in establishment of a Construction Industry Stabilization Commission, I wish to advise that in determining prevailing rates of wages under the Acts in which I am charged with such function, I shall as a matter of administrative policy not determine any wage rate to be prevailing in excess of that wage rate which the commission approves for stabilization purposes in a particular area, unless unusual circumstances or compelling evidence to the contrary are presented."

This would appear to prepare the way for a smoother operation of the new wage stabilization commission.

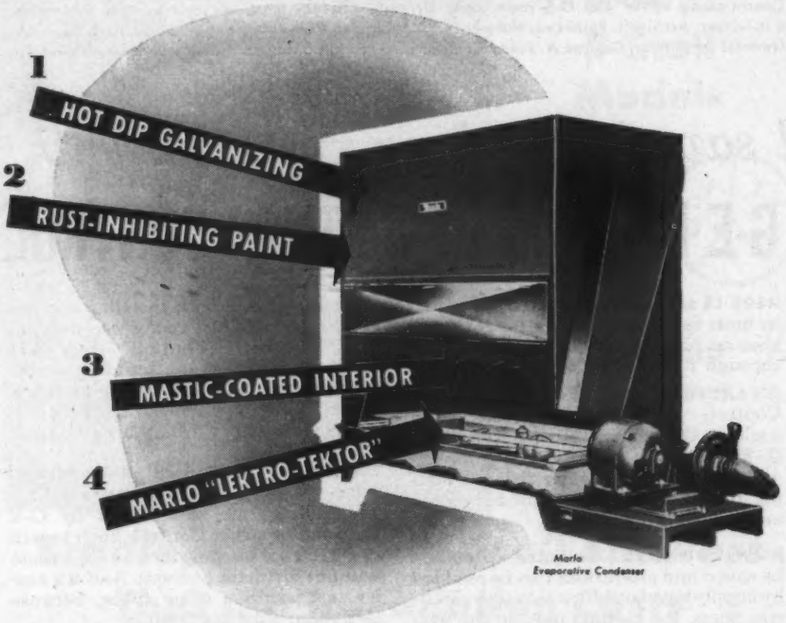
Establishment of the unit came in response to requests from no less than nine national contractors' associations and the A. F. of L. Building and Construction Trades Department. WSB explained that a specialized, expert commission was necessary for effective administration of wage stabilization in the construction industry because of the

(*Continued on page 228*)

NOW...MORE IMPORTANT THAN EVER

...MARLO QUADRUPLE PROTECTION

against CORROSION!



With greater emphasis being placed constantly on *endurance* of equipment, Marlo Evaporative Condensers and Cooling Towers offer this exclusive four-way protection to assure more dependable and longer-lasting installations for you:

OUTSIDE — Marlo galvanized sheets and frames are sprayed with a special rust-inhibiting alkyd resin-base paint that forms an extra front line barrier against corrosive elements.

INSIDE—sheets, panels and galvanized parts are coated with a sound deadening asbestos-asphalt mastic that doubles as an efficient corrosion-retardant. Marlo's exclusive "Lectro-Tektor" affords additional internal protection by preventing electrolytic sump tank corrosion.

Write for information on the complete Marlo line.

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FOR INDUSTRIAL PLANTS...

FIBERGLAS* Roof Insulation



It's low in thermal conductance

It's long lasting... It's Economical

JOB DATA ON ANOTHER FIBERGLAS INSULATED ROOF

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Architect: Albert Kahn Associates.....Detroit

General Contractors: Darin & Armstrong.....Detroit
Bryant & Detwiler Co.....Detroit

Roofing Contractor: Arrow Sheet Metal Works, Inc.....Buffalo

Roof Deck: Steel Deck

Roof Insulation: Fiberglas Roof Insulation—approximately 1,000,000 sq. ft. of 1" thick material

OWENS-CORNING
FIBERGLAS
ROOF INSULATION

*Fiberglas is the trade mark (Reg. U. S. Pat. Off.) of the Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

Low Thermal Conductance—When you specify the heat conductance required for roof insulation you make unmistakably clear the degree of heat protection you wish. We'll gladly certify to the low "C" values of Fiberglas Roof Insulation as shown:

Thickness:	½"	¾"	1"	1¼"	1½"	2"
Heat Conductance:	.50	.33	.25	.20	.17	.13

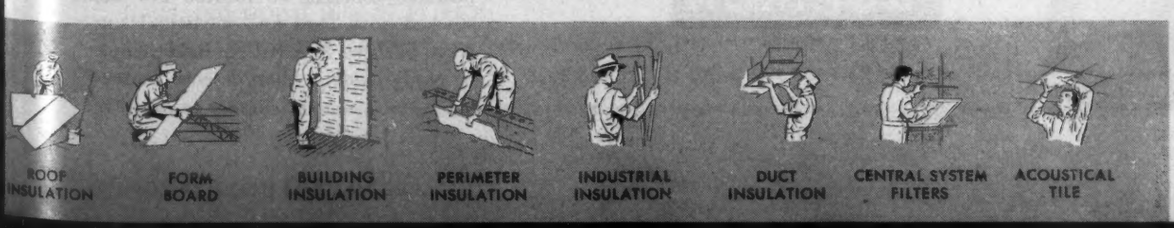
Long Lasting—Will not rot or decay, swell or shrink—fibers of glass are unharmed by possible dampness. Will not deteriorate from exposure to either the elements or normal roof traffic. Durability and low maintenance costs are assured.

Competitively Priced—For equal heat resistance its cost, installed, usually equals and in some instances runs below the comparable cost of less durable roof insulations. Light in weight, easy to cut and handle, it is rapidly installed by standard methods.

With rapid installation and conservation of fuel again gaining in importance, you can specify Fiberglas Roof Insulation with confidence. For complete information write for "The Design of Insulated Roofs" (a 36-page manual) or refer to Sweet's Files—Architectural.

Owens-Corning Fiberglas Corporation, Dept. 68-G, Toledo 1, Ohio.
Branch Offices in Principal Cities.

WRITE FOR FIBERGLAS DESIGN DATA





WASHINGTON (*Cont. from p. 226*)

operational and bargaining peculiarities.

These are some of the things that set the building industry apart: work of the industry is performed on separate project sites rather than in fixed industrial plants; workers may be employed by a number of different contractors, shifting from one to the other; the work is highly seasonal; collective bargaining typically takes place between the unions and contractors' associations in a locality and normally proceeds with each craft union negotiating separately.

General Wage Regulation 12, which sets up the commission, is accompanied by this statement of consideration:

"The regulation authorizes the commission to stabilize wages on the basis of areas traditionally established for collective bargaining purposes. This is called for by the nature and practices of the industry and is in accord with stabilization experience.

"The special characteristics of the industry make many of the Board's present regulations, intended for general applicability to industrial employment relations, technically unsuited to the building and construction industry. Effective administration of the wage stabilization requires a specialized, expert commission. In no other way can case load and other problems posed by the operational and bargaining peculiarities of this industry be solved."



Shorts

• Enactment of the new defense housing bill would not stop the abrupt downturn in new housing construction, said H. R. Northup, executive vice president of the National Retail Lumber Dealers Association. He attributed the volume decrease to shortage of mortgage funds of home building and maintained that passage of a housing law would in no way offset this deterrent to new home building. Added Northup: "In spite of all the pressure for Congressional action to expedite defense housing, fewer than 10,000 units have been certified in defense areas, although there is no existing limit on the number that could be approved if the situation were regarded as critical."

• Outlying neighborhood shopping centers should be planned to serve as evacuation points in civilian defense preparation against bombing attack. This is the opinion of Alexander Summer, president of the National Association of Real Estate Boards. The organization's committee on civilian defense now is studying this factor in defense planning. It is believed that thousands of neighborhood business centers are located and designed in a way that makes them especially well suited to serve as evacuation points. Liberal parking spaces enable large numbers of persons to come in by car without disorder. They are well heated and could accommodate thousands of evacuees. Usually business concerns so located are well stocked with food and medicinal supplies. In short, N.A.R.E.B. feels them to be ready-made civilian defense centers.

(*Continued on page 230*)



JOB: T. W. Rogers Co., Lynn, Massachusetts.
ARCHITECT: H. E. Davidson & Son, Boston, Massachusetts.
LIGHTING ENGINEER: J. Robert Cornell, Lynn Gas & Electric Co., Lynn.
SUPPLIER: DesRoberts Electric Supply Co., Lynn.
FIXTURES: No. 3224 two lamp recessed fixtures, with diffusing glass, on 10' spacing.
INSTALLATION DATE: July, 1946.
INTENSITY: Average on counters — 38 Footcandles in service. Average throughout area — 31 Footcandles in service.

Can you guess the date of this lighting installation?

Don't feel too badly if you fail in this "guess-test." Not many would know that these modern-as-tomorrow LITECONTROL fixtures were installed in July, 1946 — *five years ago!*

As you can see, the years of continuous use in this up-to-date department store have exacted no toll — either in appearance or performance — from these clean-lined, functional No. 3224 Trof-fer Type Recessed Units.

What's more, in addition to the proven feature of dependable long life, this unit is outstanding for easy access and low maintenance cost.

On *your* next lighting job, prove for yourself — as so many others have profitably been doing for years — that it pays to save with LITECONTROL . . . in time, in efficiency, in money.

Call in your LITECONTROL Representative. No obligation, of course.

LITECONTROL *Fixtures*

KEEP UPKEEP DOWN

LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

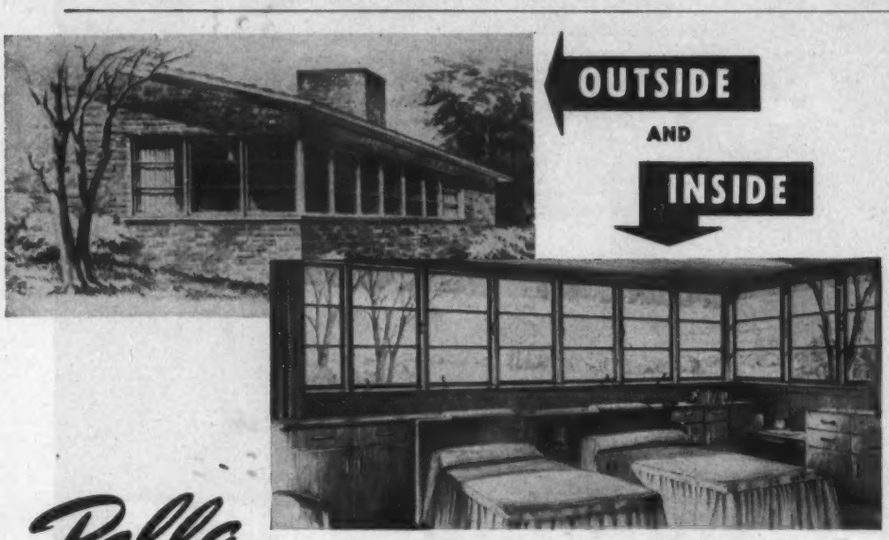
DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

THE RECORD REPORTS

(*Continued from page 228*)

• The Federal Trade Commission has ordered two cement-producing firms to revise their pricing practices. The case came up in connection with the old problem of price differentials in sale of cement transported by rail or by truck. Firms involved were the Monolith Portland Cement Company and its subsidiary, Monolith Portland Midwest, both located at Los Angeles. FTC ordered the concerns to refrain from "unlawfully discriminating in price against customers who take delivery of cement by truck." The case involved the product as it was dispatched from the Laramie, Wy., plant where buyers who took delivery by truck were charged 20 cents per barrel more than those shipping by rail freight.

• The Home Owners' Loan Corporation closed its books late in May after 18 years of activity in which time it enabled some 800,000 home owners — about four out of every five borrowers — to avert loss of their property by foreclosure. During the depression years HOLC disbursed $2750 million to harassed financial institutions and individual lenders in exchange for frozen mortgages. The agency wound up its history with a balance of $14 million which was turned over to the U. S. Treasury.



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PROVIDE CUSTOM WINDOW EFFECTS from STOCK SIZE UNITS

Pella Casement Units can be combined into more than 300 different sizes of varying width and height. Installation cost is cut to a minimum because all Pella Casement Windows are completely assembled and pre-fitted at the factory. Pella Casements, in modular dimensions, fit right into specified rough openings.

CHECK THESE CONVENIENT, LOW-COST Pella FEATURES

ROLSCREENS—Pella Casements are equipped with inconspicuous, convenient Rolscreens that roll up and down like window shades. Rolscreens eliminate putting up, taking down, painting, repairing and save valuable storage space.



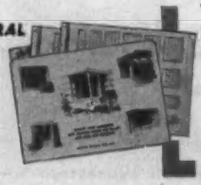
EASY TO OPERATE — Pella's patented hinge design and construction assure easy operation.

FITS ALL TYPES ARCHITECTURE — Pella Casements fit snugly into wood, frame, brick, brick veneer, stone, etc. They convey dignity and stateliness to Colonial architecture . . . enhance Cape Cod "coziness" . . . lend breadth to Modern or Spanish styles and sturdiness to half-timbered English.

DUAL GLAZING AND WEATHERSTRIPPING All Pella Casements are dual glazed to insulate against winter cold and summer heat . . . weather-stripped to eliminate drafts.

3-LIGHT WIDE UNIT — Only Pella can build these wide casement units, made possible because of Pella's patented hinge design, superior sash construction and steel inner frame.

For Further Information, see our catalog in SWEET'S ARCHITECTURAL AND BUILDING FILES



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Firm _____

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City _____ State _____

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ON THE CALENDAR

Current through Sept. 30: Festival of Britain, including architectural exhibition on main exposition grounds, south bank of Thames, London — London and throughout British Isles.

Current throughout 1951: 1951 Good Design, second in the series of well-designed home furnishings exhibitions, sponsored by the Museum of Modern Art and the Merchandise Mart, Chicago — The Merchandise Mart, Chicago.

July 1–Sept. 1: Fountainebleau School of Fine Arts and Music. Details available from: Fountainebleau Association, 122 E. 58th St., New York City.

July 4–Aug. 12: Small exhibition of Le Corbusier architecture, painting and design. A model of the Villa Savoye, two paintings, two chairs and a perspective drawing, all done around 1930 — Museum of Modern Art, 11 W. 53rd St., New York City.

July 9–19 and July 23–Aug. 2: Institute on "Community Planning in Normal and Critical Times" (in two sections) — New School for Social Research, 66 W. 12th St., New York City.

July 12–Sept. 8: Exhibition on "100 Years of British Architecture" — Royal Institute of British Architects, 66 Portland Pl., London.

July 15–21: Seventh International Hospital Congress, Brussels, Belgium. Information through American Express Co., 65 Broadway, New York City.

July 21–Aug. 4: Oxford Summer School of Measured Drawing, held in connection with the Festival of Britain. Details available from: J. Brosgall, Shire Hall, Reading, England.

Aug. 2–5: Midsummer Conference, Michigan Society of Architects — Grand Hotel, Mackinac Island, Mich.

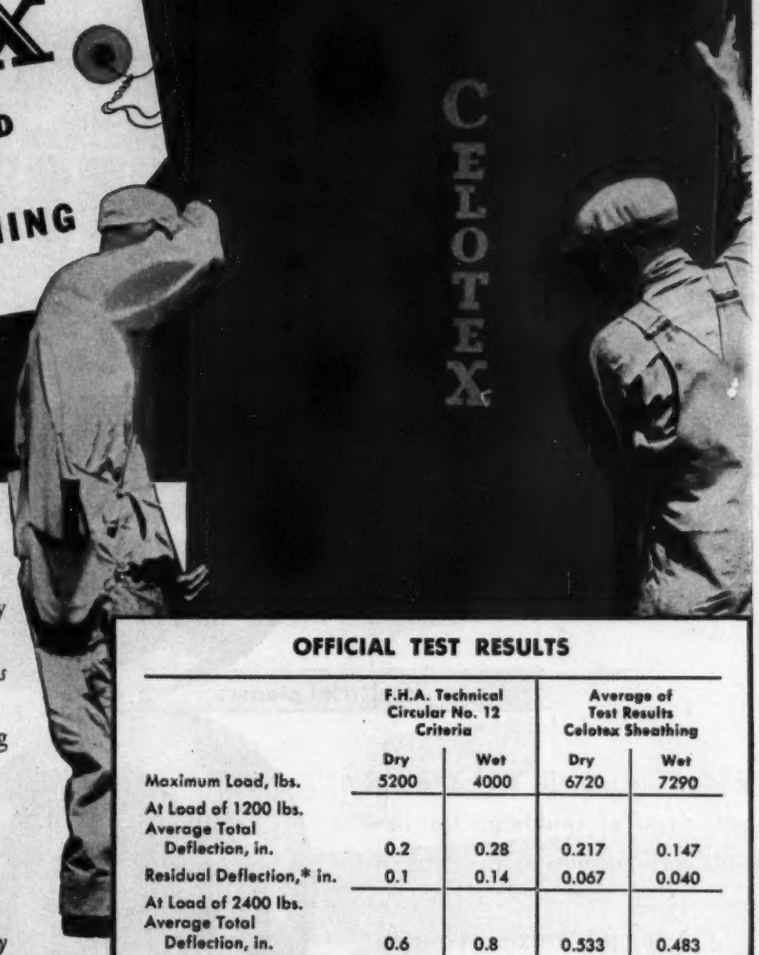
(*Continued on page 232*)

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And remember, Celotex Double-Waterproofed Insulating Sheathing *insulates as it builds*—does both jobs at one low cost. Stronger, more rigid than ever! Faster, easier to apply! And it's the *only* sheathing made of tougher, stronger long Louisiana cane fibres—and protected by the patented Ferox® Process from fungus, dry rot, termites!

OFFICIAL TEST RESULTS

	F.H.A. Technical Circular No. 12 Criteria		Average of Test Results Celotex Sheathing	
	Dry	Wet	Dry	Wet
Maximum Load, lbs.	5200	4000	6720	7290
At Load of 1200 lbs. Average Total Deflection, in.	0.2	0.28	0.217	0.147
Residual Deflection,* in.	0.1	0.14	0.067	0.040
At Load of 2400 lbs. Average Total Deflection, in.	0.6	0.8	0.533	0.483
Residual Deflection,* in.	0.3	0.4	0.230	0.187

*Deflection remaining after removal of load

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THE CELOTEX CORPORATION, 120 S. LA SALLE ST., CHICAGO 3, ILLINOIS

THE RECORD REPORTS

(*Continued from page 230*)

Aug. 13–25: Special summer course in Swedish Decorative Arts and Architecture — Swedish Institute, Kungsgatan 34, Stockholm 3, Sweden.

Aug. 14–16: National Conference on prestressed concrete — Massachusetts Institute of Technology, Cambridge.

Aug. 20–23: Pacific General Meeting, American Institute of Electrical Engineers — Multnomah Hotel, Portland, Ore.

Aug. 27–30: National Technical Conference, Illuminating Engineering Society — Hotel Shoreham, Washington.

Sept. 1–Oct. 6: Architects' Fall Trek to Europe, under leadership of Clair W. Ditchy, F.A.I.A.

Sept. 11–20: Building Research Congress, with headquarters at Institution of Civil Engineers, London. Details from: The Organizing Secretary, Building Research Station, Bucknalls Lane, Garston, Watford, Herts, England.

Sept. 16–21: National Convention, American Society of Sanitary Engineers — Hotel Statler, Detroit.

Sept. 17–20: 53rd Annual Convention, American Hospital Association — St. Louis, Mo.

Sept. 23–30: Second annual congress, Union Internationale des Architectes — Rabat, Morocco.

Sept. 28–29: Fall meeting, Virginia Chapter, American Institute of Architects — Hotel Natural Bridge, Natural Bridge, Va.

Sept. 29–Oct. 9: Building and Decoration Exhibition, sponsored by N. V. Standard Boekhandel — Antwerp, Belgium.

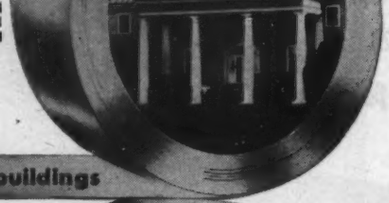
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OFFICE NOTES

Offices Opened

• Carl H. Gausewitz has opened an office for the practice of architecture and engineering at 201 Tenny Bldg., Madison, Wisc.

• The firm of Edward Loewenstein, A.I.A., Architect, has announced the opening of a branch office at 129 S. Main St., Belvedere Hotel Bldg., Reidsville, N. C. The firm was established in Chicago in 1937, closed from 1941 to 1946 and reopened in Greensboro, N. C., in 1946.

• Bernard J. Sabaroff, A.I.A., has opened an office for the practice of architecture at 1179 Market St., San Francisco 3, Calif.

• Walter L. Wimer, Engineer, head of the architectural engineering firm of Walter L. Wimer and Associates, has announced the opening of an affiliated office at 1926 Sunrise Blvd., Fort Lauderdale, Fla., in partnership with Charles Foster McKirahan, architect.

New Firms, Firm Changes

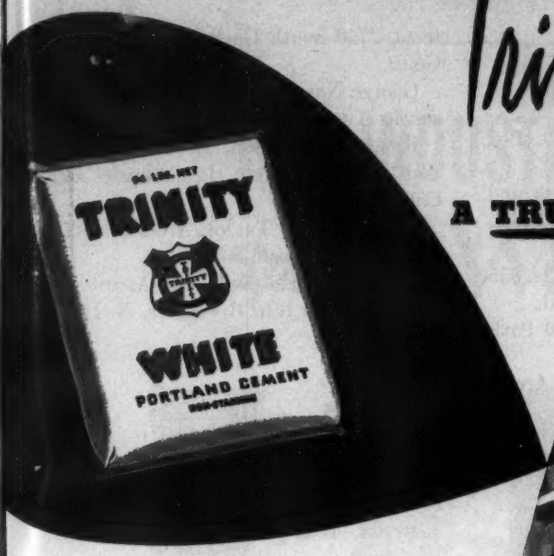
• Brig.-Gen. Paul X. English (Ret.), wartime chief of the Industrial Division of the Chemical Corps, has joined Guy B. Panero, Engineers, of New York and Washington, as director of industrial engineering.

• Seward H. Mott, former director of the Urban Land Institute, research and educational organization in the land planning field, has announced the establishment of his own consulting firm,

(*Continued on page 234*)

Trinity White

A TRUE [illegible] CEMENT



Wherever the need for white is indicated, use Trinity—the *whitest* white cement. Its whiteness has a penetrating quality for mass or for contrast. You'll get fine results with Trinity White in architectural concrete units, terrazzo, stucco, or cement paint. Where pigment is added, the extra whiteness gives clearer color tones. Trinity White meets Federal and ASTM Specifications. Trinity White Division, General Portland Cement Co., 111 W. Monroe St., Chicago; Republic Bank Bldg., Dallas; 816 W. 5th St., Los Angeles; 305 Morgan St., Tampa; Volunteer Building, Chattanooga.

the whitest white cement... PLAIN OR WATERPROOFED

as white as snow

THE RECORD REPORTS

(*Continued from page 232*)

Seward H. Mott Associates, in Washington, D. C. Mr. Mott will continue his association with the Urban Land Institute as secretary and as a member of the Board of Trustees.

New Addresses

Eastern District Offices, The Austin Company, Engineers and Builders, 600 Fifth Avenue, New York City.

Louis Bubeck, Architect, P. O. Box 127, West Nyack, N. Y.

Frank Grad & Sons, Architects and Engineers, Raymond-Commerce Bldg., 11 Commerce St., Newark 2, N. J.

Johannes and Murray, Architects, 855 Pershing Drive, Silver Spring, Md.

George S. Lewis, Architect, 270 Park Ave., New York 17, N. Y.

Linder, Hodgson and Wright, Architects, 2750 South Garfield St., Denver, Colo.

George Narovec, A.I.A., 626 W. Wisconsin Ave., Appleton, Wisc.

Riener C. Nielson, Architect, 5151 South Western Ave., Los Angeles 62, Calif.

Wallace Wood Taylor, Architect, 633 Telfair St., Augusta, Ga.

Walter Thomas Williams, Architect, Rochester Hill Rd., Rochester, N. H.

Free to Architects and Engineers

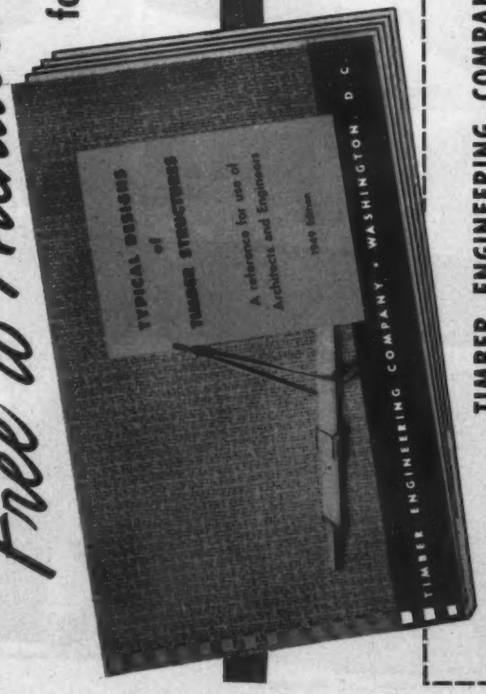
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Please send me FREE copy of "Typical Designs of Timber Structures."
We plan to build a _____

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AT THE COLLEGES

Columbia Plan Provides for Liberal Arts for Engineers

A broader education in engineering is the aim of a new plan announced by the Columbia University School of Engineering.

Twelve selected liberal arts colleges will cooperate with the School of Engineering in the plan. A prospective engineering student will have the opportunity of studying three years at one of the cooperating liberal arts colleges and two years at Columbia. When he satisfactorily completes three years at one of the liberal arts colleges, the student will automatically be admitted to Columbia's School of Engineering for two years of engineering study. Completion of the five-year program will result in appropriate bachelor's degrees from both Columbia and the liberal arts college.

In announcing the plan, Dean John R. Dunning said the School of Engineering has initiated the program to help meet the country's need for more broadly trained engineers. "This extension of the Columbia plan for a broad engineering education should encourage young men to choose engineering as their career and thus help to alleviate the shortage of engineers which threatens to handicap our production efforts," Dean Dunning added.

Illinois Tech Class Makes Campus Plan for Wisconsin

Students of Illinois Institute of Technology produced detailed models of a complete new campus for the University of Wisconsin as a recent class project.

The models were part of the May exhibit of the department of architecture, of which Ludwig Mies van der Rohe is director.

(*Continued on page 236*)

FOR INDUSTRIAL MOBILIZATION

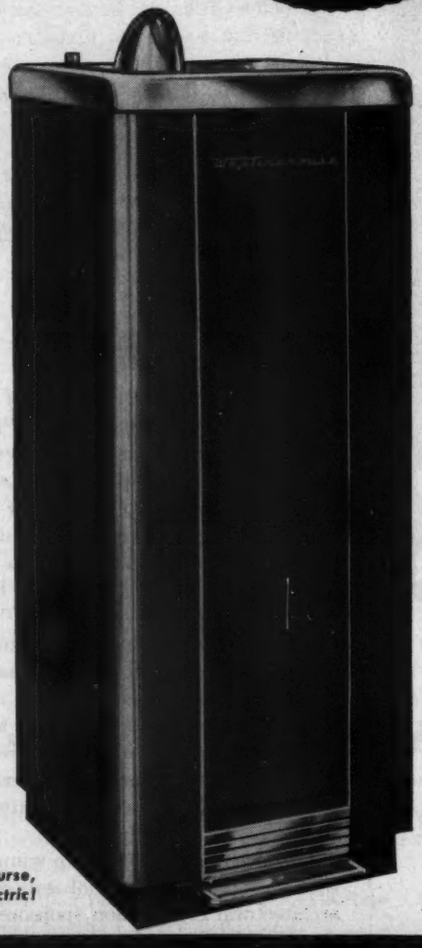
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...of course, it's electric!

Explosion-Proof!

COOLERS FOR HAZARDOUS LOCATIONS

These heavy-duty, explosion-proof Water Coolers are especially designed by Westinghouse for locations where the atmosphere contains inflammable and explosive mixtures of air and vapors or gases. All controls, wiring terminals and arcing points are safely sealed away from explosive and combustible gases, dusts and vapors. Both the 8 and 14-gallon models are listed by the Underwriters' Laboratories, Inc., for Class I, Group D and Class II, Groups F and G, hazardous locations.

Westinghouse manufactures a complete line of self-contained Water Coolers, including:

- *Air-Cooled,* Bottle and Pressure Types . . . 3 to 13-gallon capacities.
- *Water-Cooled,* Heavy-Duty Pressure Types . . . 14 to 22-gallon capacities.
- *Compartment-Type* . . . in Bottle and Pressure Models.

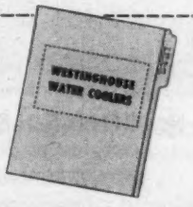
LET US HELP YOU WITH YOUR WATER COOLER PROBLEMS

For specific assistance on your water cooler problems, look in the yellow pages of your telephone directory for the Westinghouse Water Cooler Distributor. Take advantage of our factory-trained people because they can be of real help to you.

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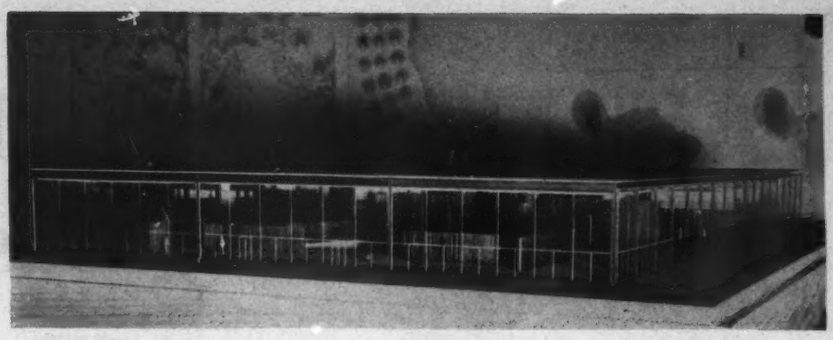
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City_____ State_____

YOU CAN BE SURE...IF IT'S
Westinghouse

THE RECORD REPORTS

(*Continued from page 234*)

Seven graduate students cooperated on the project. The model of the complete campus, with all buildings and landscape, was executed by James Ferris. Larger individual models of a student union, administration building, library, dining hall, dormitory and drawings of a field house were done by other candidates for master's degrees.



Model for student union building was part of recent class project at Illinois Tech

for heavy traffic

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In spite of the hard, continuous use given the strong, heavy-duty RIXSON Closers functioning the doors of this busy B & G Restaurant on Chicago's "Boul Mich" . . . they will give years of trouble-free service . . .

* **CONCEALED . . .** they are FIRMLY embedded in the RIGID FLOOR and cannot work loose and out of adjustment.
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Armour Research Foundation Creates Two New Divisions

Two new research divisions have been established at Armour Research Foundation, and Dr. LeVan Griffis and Dr. E. H. Schultz of the Institute staff have been named to head them.

Doctor Griffis will be manager of the engineering mechanics division, which will be comprised of three new departments: structural research, mechanism and propulsion research and heat-power research.

The new electrical engineering division, with Doctor Schultz as manager, will include the existing departments of electrical engineering and physics.

Awards

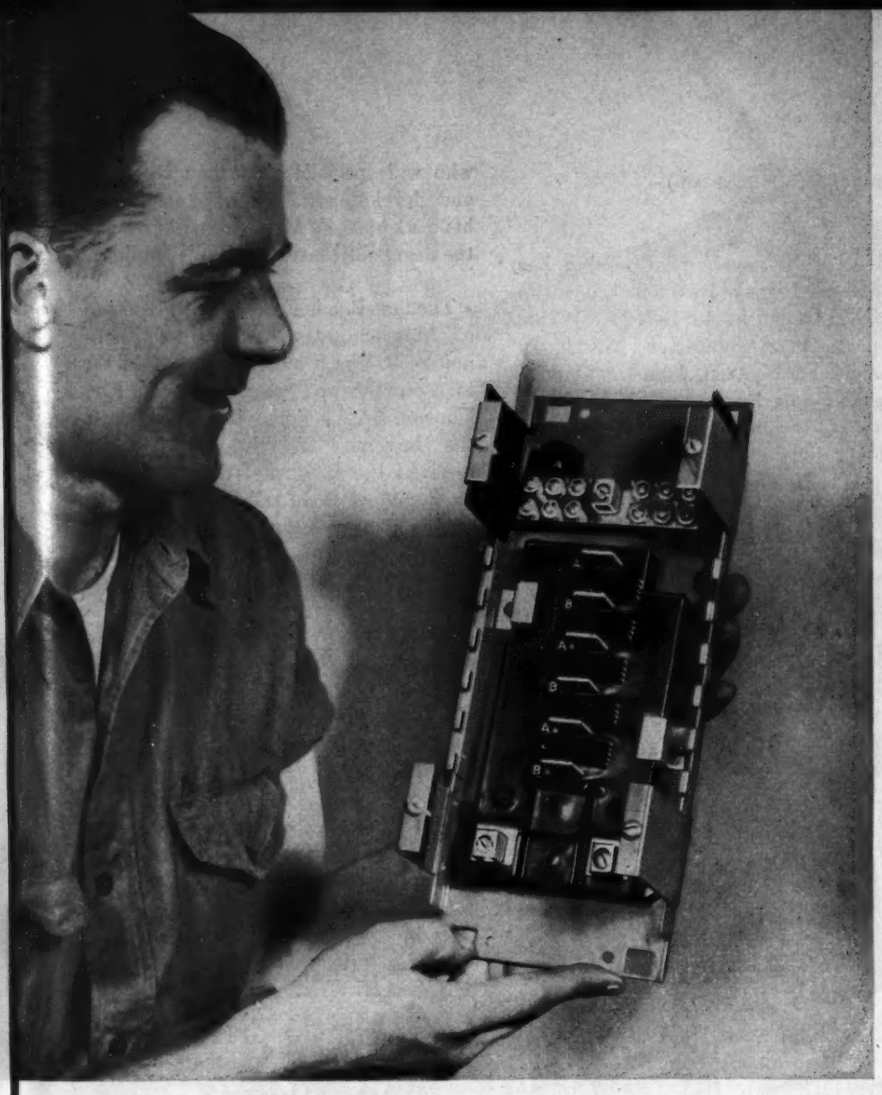
• Joseph Norwood Bosserman of Harrisonburg, Va., a student at the Princeton Graduate School of Architecture, has been awarded the 1951 LeBrun Traveling Scholarship of the New York Chapter of the American Institute of Architects. Honorable Mention was awarded to John H. Bardes of Philadelphia.

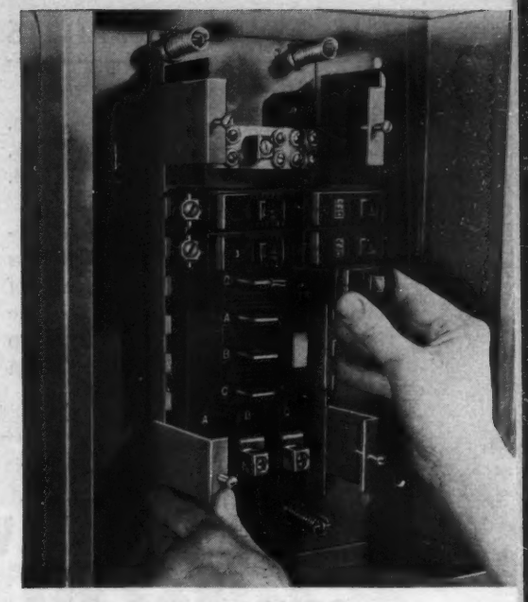
The award, $2800 for a trip of at least six months in Europe, was made for Mr. Bosserman's submission of the most competent design for a motel to be erected on the outskirts of a town of 30,000 inhabitants, with consideration for the use of the building in time of emergency.

Mr. Bosserman is the 24th winner of the scholarship, an annual nationwide architectural competition sponsored by the New York Chapter as trustees of the fund established by Pierre LeBrun in 1910. The first award was given in 1912 to Otto R. Eggers.

J. Bruno Basil, chairman of the scholarship committee, headed the jury,

(*Continued on page 238*)





QUICK-MAKE, QUICK-BREAK PLUG-IN BREAKER—Trumbull's new NLTQ Panelboard introduces the first *plug-in* circuit breaker with quick-make, quick-break operation. Other features: both *thermal* and *magnetic* protection . . . trip-free . . . pressure-type silver-plated copper plug-in contacts . . . all ratings physically interchangeable. Adjacent breakers are on alternate phases—assuring balanced loads and circuits.

New insulating material

KEEPS PANELBOARDS COOLER

The base of this panelboard interior is made of *Plastisol* . . . the first time this amazing plastic material has been used for this purpose.

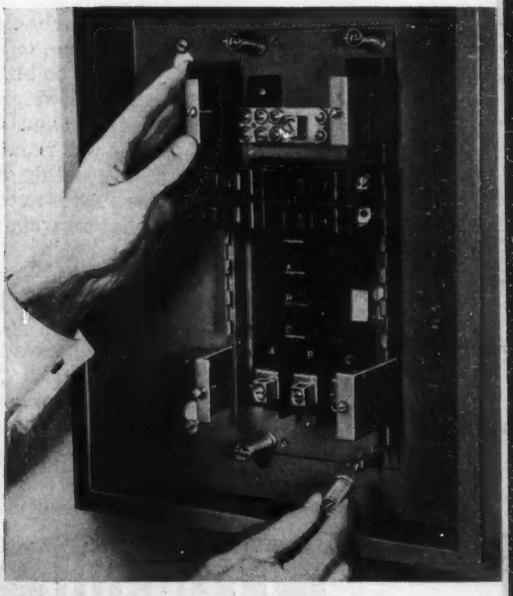
Here are some of the properties which make Trumbull's new NLTQ Panelboard a superior product which will give you excellent service.

Plastisol has very high thermal conductivity and is an excellent radiator of heat. Copper bus bars encased in Plastisol run 10% cooler than in open air!

SUPERIOR TO ALL OTHER TYPES OF INSULATION

Other Plastisol advantages making it superior to all other types of insulation for this purpose include its ability to resist acid and alkali, high temperatures (not harmed at 212 F), tracking and carbonizing. It will not shrink or become brittle, even at minus 30 F.

Trumbull's Plastisol base is Underwriters' Laboratories, Inc. approved and endorsed by the Electrical Council.



QUICK INSTALLATION—NO NUTS AND WASHERS—Interior is mounted in box by compression springs . . . which permit easy release for removal. Springs also permit lining up fronts regardless of uneven box installation. Trumbull NLTQ panelboards with lug or circuit breaker mains come in capacities up to 225 amperes in a range of 4 to 42 circuits. Write for Bulletin TEB-14.

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.

THE RECORD REPORTS

(*Continued from page 236*)

which also included Robert I. Carson, Maurice R. Salo, Randolph Evans, Leopold Arnaud and Thorne Sherwood.

• The College of Architecture and Design of the University of Michigan has announced that Matthias R. Goebel of Racine, Wisc., has been awarded the George G. Booth Traveling Fellowship for 1951. Mr. Goebel plans to travel in England and Europe.

• Marvin E. Goody of Brooklyn has been named for the Research Fellowship in Civic Design for 1951–52 at the Yale Department of Architecture. Mr. Goody received his B. Arch. from the University of Pennsylvania and his M. Arch. from Massachusetts Institute of Technology. The newly-established fellowship is being awarded next semester for the first time at Yale and is intended to aid an outstanding graduate student who will specialize in urban structure and development. When he completes his work at Yale, Mr. Goody will receive the degree of Master of City Planning.

• The first Bemis Fellowship in Housing at Massachusetts Institute of Technology has been awarded to James W. Hanson for the year 1951–52. Mr. Hanson, who majored in economics at the University of Nebraska, where he received the B.Sc. and the M.A., and later studied at M.I.T., will undertake for his doctorate thesis a study of economic aspects of the influence of the F.H.A. on the Greater Boston mortgage market. He will work closely with the departments of architecture and city and regional planning in an effort to establish objective design standards. His study will analyze the influence of the F.H.A. on builders, owners and designers.

• The Gold Medal of the Brooklyn Chapter of the American Institute of Architects, awarded annually to the outstanding member of the graduating class in the School of Architecture at Pratt Institute, was awarded this year to Robert H. Welz.

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COMPETITIONS

• "To encourage more creativeness in the design of new school buildings," *The School Executive* Magazine has announced a competition for architects in the United States and Canada. Any firm which designs or constructs a school building during the calendar year 1951 is eligible. Entries must be filed by December 1 and all materials must be submitted by December 31.

The competition is approved by the Committee on Competitions of the American Institute of Architects, and the three architect members of the five-man jury of awards were selected jointly by the A.I.A. committee and *The School Executive*.

The jury members are: Robert Hutchins of Moore and Hutchins, Architects, New York City; Walter Kilham Jr. of O'Connor and Kilham, Architects, New York City; Morris Ketchum of Ketchum, Giná and Sharp, Architects, New York City; Ray L. Hamon, chief of the Schoolhousing Section, U. S. Office of Education; and Benjamin C. Willis, superintendent of schools, Buffalo.

Five awards, in the form of bronze

(*Continued on page 240*)

NEW!



JOB-RATED LIGHTING FOR AMERICAN INDUSTRY

NOW—MITCHELL introduces the first Job-Rated lighting line designed to the specifications of American industry. "*Dynalite*" offers 82 high-efficiency units in an unprecedented range of types for *proper* lighting in every working area. Featuring exclusive new advantages, "*Dynalite*" makes possible simplified planning and installation of lighting rated to provide maximum efficiency in any industrial application.

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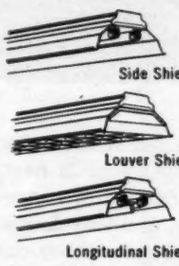
T-12 40-watt 48" bi-pin
T-17 40-watt 60" Low-Brightness mogul bi-pin
T-17 40-watt 60" Low-Brightness single pin
T-17 85-watt 60" Krypton mogul bi-pin
T-12 40-watt 48" 430 ma. Slimline
T-12 75-watt 96" 430 ma. Slimline

4 LAMPHOLDER TYPES



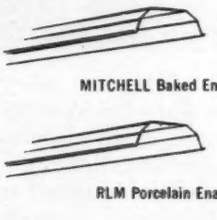
Medium Bi-Pin
Push Type Single Pin
Mogul Bi-Pin
Turret Type Bi-Pin

3 SHIELDING TYPES



Side Shielded
Louver Shielded
Longitudinal Shielded

2 REFLECTOR TYPES



MITCHELL Baked Enamel
RLM Porcelain Enamel

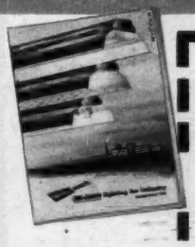


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THE RECORD REPORTS

(*Continued from page 238*)

plaques and scrolls, will be made. Entry blanks and rules may be obtained from Walter D. Cocking, chairman of the Board of Editors, *The School Executive* Magazine, 470 Fourth Ave., New York 16, N. Y.

• Fulbright Awards for study abroad for the academic year 1952–1953 will be made to graduate students with "records of accomplishment" in architecture, painting, sculpture, art history and the industrial art fields.

Applicants must be citizens of the United States and must have an adequate knowledge of the language of the country in which they wish to study. They must also have a B.A. degree or its equivalent in professional training by the time they take up their study. Applicants over 35 years of age are generally at a disadvantage.

Awards provide transportation, tuition, and maintenance for an academic year. The countries with which educational exchange arrangements are now in effect are Australia, Austria, Belgium and Luxembourg, Burma, Egypt, France, Greece, India, Iran, Italy, The Netherlands, New Zealand, Norway, Pakistan, the Philippines, Thailand, Turkey and the United Kingdom.

Applicants who will be enrolled at an institution of higher learning in the fall of 1951 must apply through the Fulbright Program Adviser on their campus for information and application forms before October 15, 1951. Others should write directly to the Institute of International Education, 2 W. 45th St., New York 19, N. Y., before September 30, 1951.



ELECTIONS APPOINTMENTS

• Francis Keally has been elected president of the New York Chapter of the American Institute of Architects. Also elected were Mortimer E. Freehof, vice president; Frank G. Lopez, secretary; and Jonathan F. Butler, treasurer. New members of the executive committee are Ronald Allwork (to 1953) and B. Sumner Gruzen and Olindo Grossi (to 1954).

• Members of the Brooklyn Chapter of the American Institute of Architects have elected Vito P. Battista as their new president. Other officers named are: Harry Silverman, vice president; Irving Marks, secretary; and Andrew di Camillo, treasurer. Directors elected to serve for two years were Vincent Pellegrino, Charles Spindler and Jacob Sherman. Anthony Amendola was chosen as director for one year.

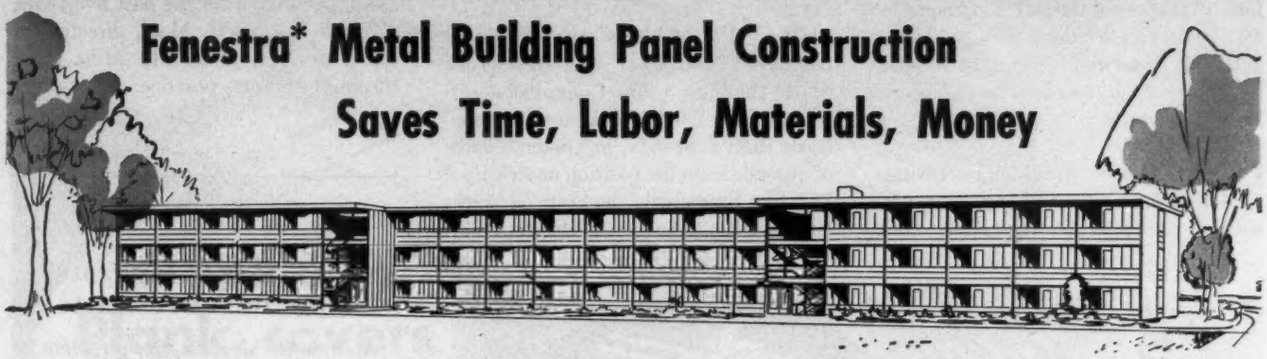
(*Continued on page 242*)



Francis Keally, who heads New York A.I.A.

Building costs cut 1/3 for Unique New Airmen's Barracks

Fenestra* Metal Building Panel Construction Saves Time, Labor, Materials, Money



Only $1.11 Per Cubic Foot for this 37 x 282-ft., 3-story Offutt Air Force Base barracks housing 216 men. Total cost about 321 thousand dollars—approximately 30% less than conventionally built barracks . . . and the whole building is firesafe! Contractor: Korshoj Construction Company, Blair, Nebraska.

As compared to the cost of conventional barracks construction, estimated at $2,300 per man, the cost of the nonconventional barracks illustrated above is only an estimated $1,485 per man (just $1.11 per cubic foot)!

And this barracks at Offutt Air Force Base, Omaha, Nebraska, is something special. Flyers of the Strategic Air Command fly "around the clock." As some sleep, others are "taking off." So army engineers are giving them 2-man rooms for peaceful quiet and privacy, better and more convenient bath facilities, a pleasanter place in every way—all at $1.11 per cubic foot . . . a saving of one-third. How?

First, they erect a steel frame. Then into the frame go Fenestra "C" Panels to form curtain walls. These strong, lightweight steel sandwiches packed with glass fiber insulation are 16 inches by 14 feet and can be placed by two men. They form a finished, prime-painted, noncombustible outside and inside wall at the same time. After three courses of "C" Panels, in goes a 14-foot window assembly including Fenestra Steel Windows. Then more panels and up leaps the building!

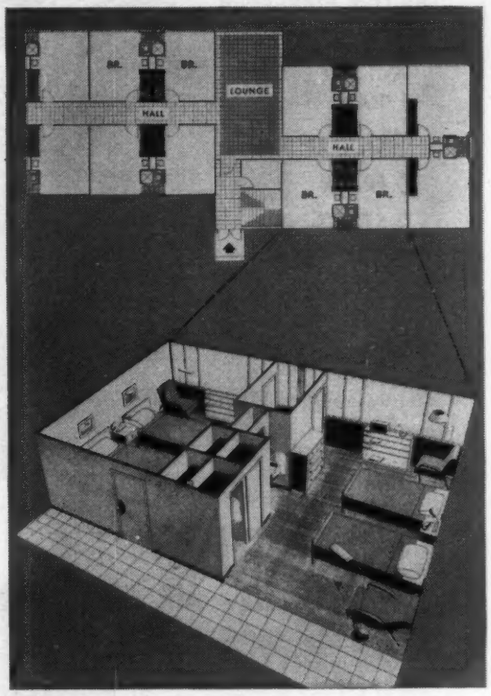
No mason, no carpenter, no lather, no plasterer. Just a steel worker and a painter, period!

Floors, ceilings and roof are Fenestra "AD" Panels, cellular, with a smooth, flat surface top and bottom. This "AD" Panel floor is topped with two inches of concrete and finished in asphalt tile. And the bottom of the panels forms a finished, prime-painted, noncombustible ceiling for the rooms below.

Think of the advantages in using structural material that also forms finished walls and ceilings. No wonder building costs were cut one-third!

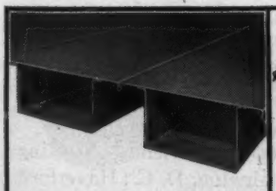
Make Those Same Savings Yourself. Call the Fenestra Representative today (he's listed under "Fenestra Building Products Company" in your Yellow Phone Book). Or mail the coupon.

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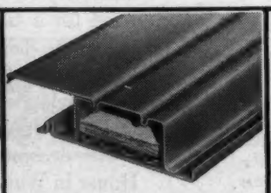


Fenestra PANELS • DOORS • WINDOWS

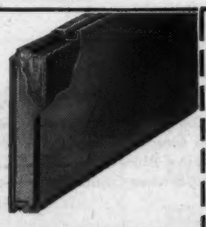
engineered to cut the waste out of building



"D" Panels for floors, roofs, ceilings. Standard width 16". Depth 1½" to 7½".



Acoustical "AD" Panels for ceiling-silencer-roof. Width 16". Depth up to 7½".



"C" Insulated Wall Panels. Standard width 16". The depth is 3".

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THE RECORD REPORTS

(*Continued from page 240*)

• Joseph Francis McCarthy has been elected president of the Northern California Chapter of the A.I.A. Other new officers are: Al Williams, vice president; Wendell Spackman, secretary; Helen Douglas French, treasurer; and Charles Pope, a director.

• Louis Skidmore of Skidmore, Owings & Merrill, architects and engineers, was elected president of the New York Building Congress at its 30th annual meeting in May.

• Albert P. Backhaus was appointed technical director of the New York State Building Code Commission, effective June 1. Mr. Backhaus, who succeeds Emil J. Szendy, has taken a leave of absence from his position as Principal Building Engineer of the State of Maryland to accept the appointment.

• Appointment of Max S. Wehrly as executive director of the Urban Land Institute has been announced by Urban Land Institute President Philip W. Kniskern. Mr. Wehrly, who has been assistant director for the past five years, succeeds Seward H. Mott, director for the past seven years. Mr. Mott is returning to private practice.



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ANDREW R. MORISON, 61; HEADED DETROIT A.I.A.

Andrew R. Morison, 61, president of the Detroit Chapter of the American Institute of Architects, died April 26 in Grace Hospital, Detroit. He had developed double pneumonia after an operation.

Mr. Morison, a past president of the Michigan Society of Architects, was born and educated in Scotland. He went to Canada in 1909 and seven years later to Detroit, where he worked in the office of Smith, Hinchman and Grylls, architects and engineers.

Since 1923, Mr. Morison had had his own practice, largely in the institutional and religious fields. At the time of his death he was engaged on several large housing projects, churches in the Detroit area, and dormitories at the University of Michigan.

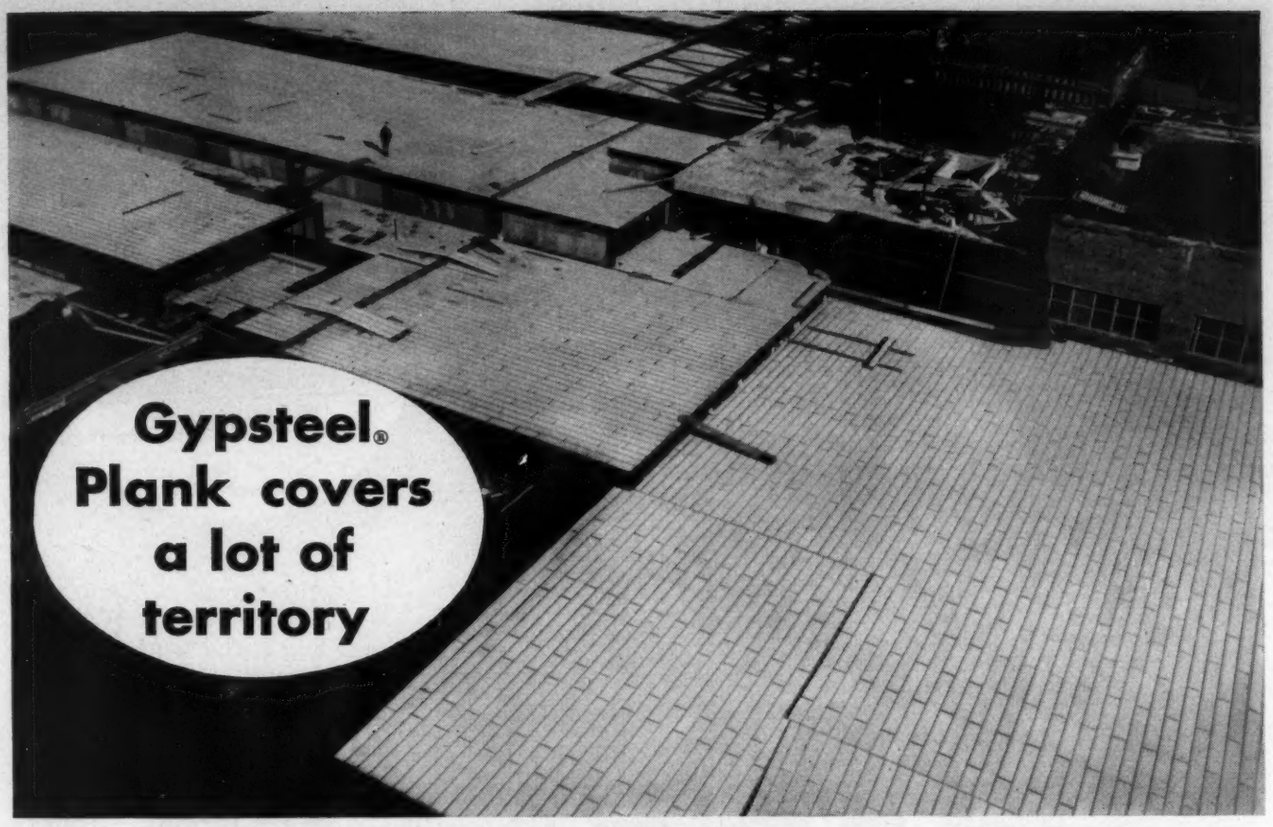
For the past 12 years he had been a member of the State of Michigan Board for Registration of Architects, Professional Engineers and Land Surveyors; and had served several times as its president.

WALTER PRICE, 93, DIES; PHILADELPHIA ARCHITECT

Walter F. Price, retired Philadelphia architect, died May 22 at Friends' Hospital in Philadelphia. He was 93 years old.

Mr. Price, who was known as an authority on old Meeting Houses, practiced for a time with his brother, William, who designed the Traymore Hotel in Atlantic City, and later formed a partnership with William McKee Waltin in Philadelphia.

He designed the Friends' Meeting House in Washington, D. C.; Haverford Union at Haverford College; the alumnae building at Mount Holyoke College; and the Phillips Memorial at West Chester (Pa.) State Teachers College.



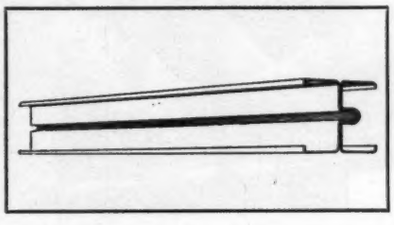
The Anheuser-Busch Brewery, Newark, N.J.—HARLEY, ELLINGTON and DAY, INC., Architects • GEORGE A. FULLER CO., General Contractor

Any way you look at it, CERTAIN-TEED's Gypsteel Plank makes an ideal roof deck. It is fireproof, light in weight (only 12 lb. per sq. ft.), strong (safe load, 75 lb. per sq. ft.; safety factor of 4) and has a high insulation value (2 in. equals 10 in. of cement).

Gypsteel Plank is a simplified form of precast construction. It requires no form work, mixing or pouring. It is tongued and grooved, and handles like lumber—easily sawed, cut, bored, resulting in minimum construction and labor costs.

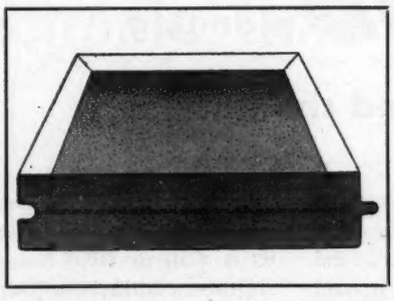
Gypsteel Plank is permanent—rot-, vermin- and termite-proof. And it makes an attractive ceiling, one that is easily painted.

Size of Gypsteel Plank, 2″ x 15″ x 10′.



Gypsteel's tough! 16 g. galvanized steel wire reinforces the highly compressed gypsum slab. Its frame is electrically welded steel, .032″ thick.

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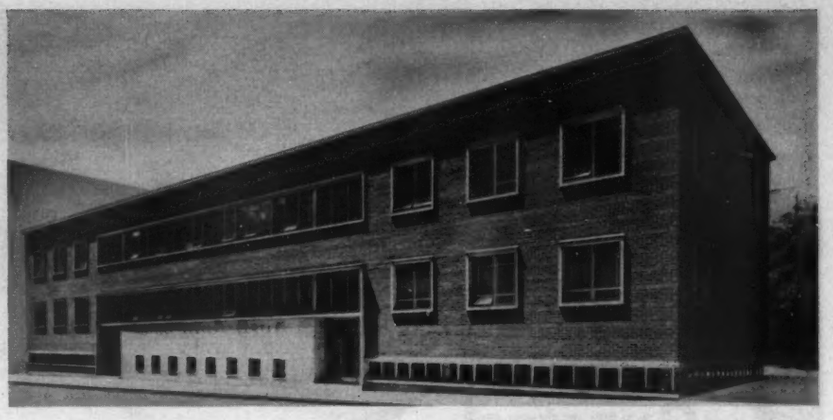
GYPSUM PLASTER • LATH • WALLBOARD • ROOF DECKS

ACOUSTICAL TILE INSULATION FIBERBOARD

CANADA

(*Continued from page 18*)

annoy residents of the community by reason of odor, dust, smoke or noise, will be prohibited. A new highway and street system also is planned. When it and the shopping centers are completed, there will be real competition for Toronto and other nearby towns.



Warner Bros. Commercial Photographers

"College Medical Center," Toronto, Ont., doctors' offices near university but privately built. Architect was Jack Brenzel



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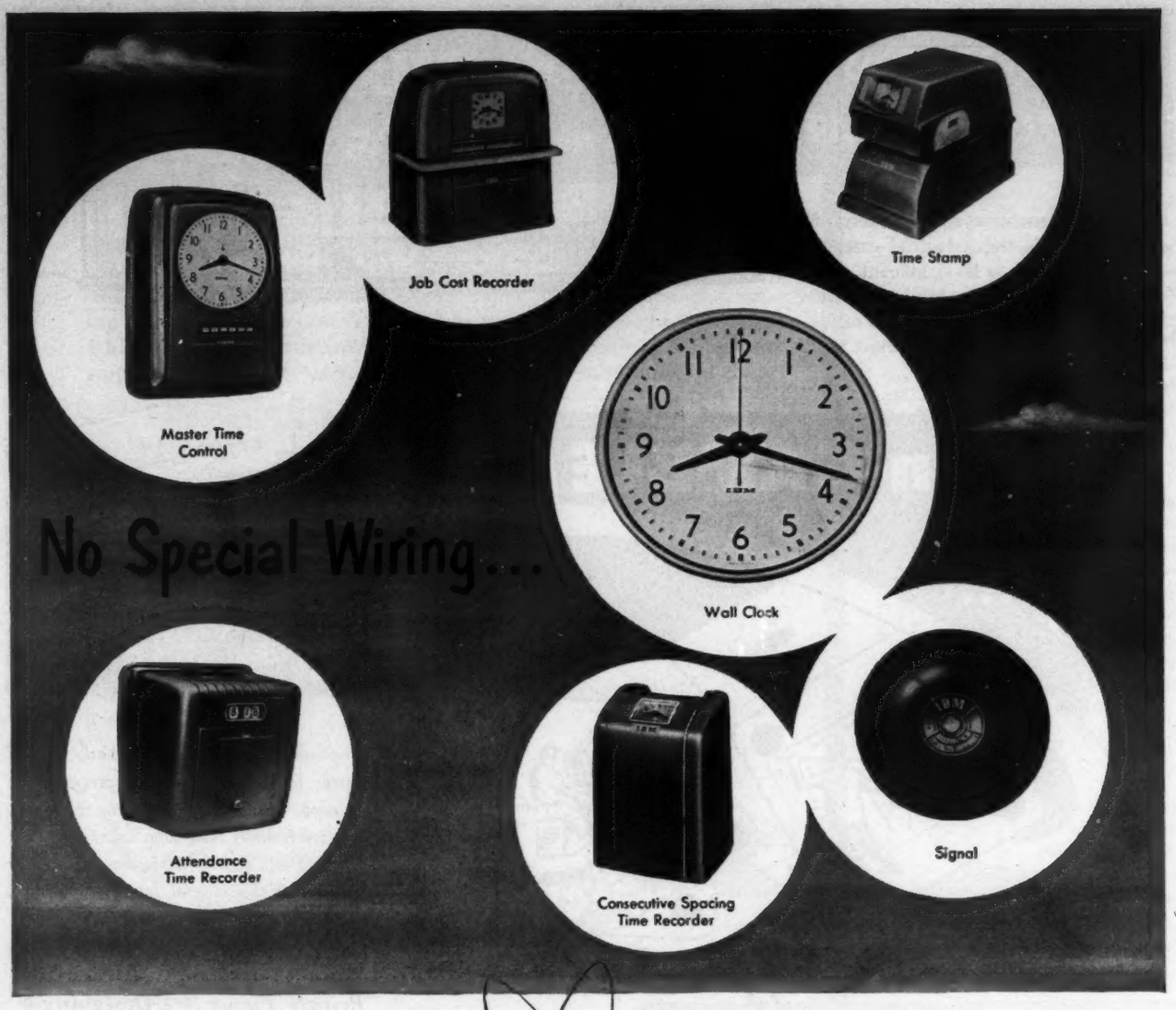
Awards of $603.9 Million Set Record High in April

The first four months of 1951 made construction history. At a time when all factors indicated likelihood of a substantial decline, contract awards reached the unprecedented height of $603.9 million, an increase of 95 per cent over the sum recorded for the first four months of 1950, and three per cent more than the total for the first six months of the same year.

MacLean Building Reports, responsible for these figures, says that government efforts to pressure construction into channels directly or indirectly related to defense production has sharply boosted deferment of projects in all categories except engineering. This is not too evident in comparing the award totals for April 1951 with those for the same month a year ago. Residential construction is up 16 per cent, commercial 53 per cent and engineering 65 per cent. The only category that's down is the one that logically might be expected to be up — industrial, which dropped 17 per cent.

The big hike in commercial construction is due to gains made by public buildings, schools and hospitals. But the effects of developing government policy on non-defense building do not appear to have affected hotels and clubs, public garages and churches, all of which show increases. Promoters of warehouses, theaters, stores and office buildings show greater awareness of the existence of restrictions and shortages, not to mention curtailed credit and the deferred depreciation allowance. Awards

(*Continued on page 246*)



with IBM Electronic Time Control

Since the turn of the century IBM Time Systems have been providing uniform time control in offices, plants, and buildings throughout the country . . . a continuous record of accurate, reliable service.

Today, a new IBM Time System—unique in its employment of electronics—is in wide use. Connected to the regular AC lighting circuit of the building, this time system keeps every clock, time recorder, and signal on uniform time *without special clock or signal wiring*. Installation and maintenance costs are reduced to a minimum. Any time indicating, recording, or signaling unit can be re-located easily and inexpensively.

Like all IBM products, the new Electronic Time System is the result of extensive research and engineering development. The use of hundreds of thousands of IBM time units attests to their accurate, trouble-free performance, their complete dependability.

All recording, signaling, or indicating units manufactured by IBM may be installed individually or as a complete system

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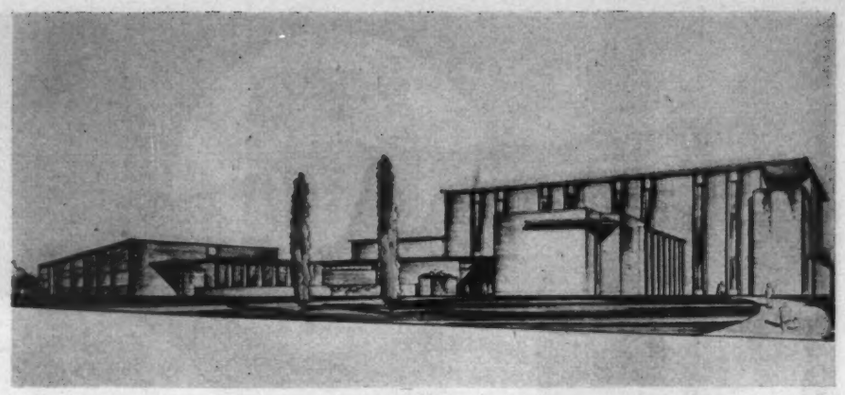
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CANADA

(*Continued from page 244*)

for these structures are definitely off.

The drop in the industrial category does not appear to be significant, since no large project fell in April to balance the big contract let for Alberta oil development in the same month last year.





...you can afford it?

Improper DESIGN—inadequate CONSTRUCTION—haphazard INSTALLATION—shoddy MATERIALS are the unknown and very costly RISKS you may take when you FAIL to use SECURITY specially manufactured and installed Doors.

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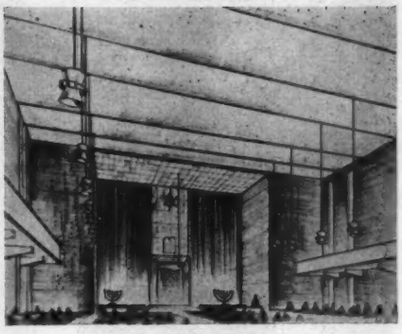
slow Operation + costly Shutdowns + high Maintenance = $$$ Lost

quality Reputation + proven Performance + more Concentrated Experience / Life of Installation = $$$ Saved

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Proposed new synagogue and educational center for Goel Tzedec congregation in Toronto. Harry B. Kohl is the architect, Isadore Merkus consulting architect. New building will seat 2400 in main sanctuary (above), 300 in chapel; has 25 classrooms

Private Firms Are Designing Defense Buildings in Canada

As Canada's defense construction activities gather momentum, private architectural and consulting engineering firms are being employed by Defense Construction Ltd., the government agency in charge, to design the projects, and their inspection and supervision are carried out by Central Mortgage and Housing Corporation, the government shelter agency.

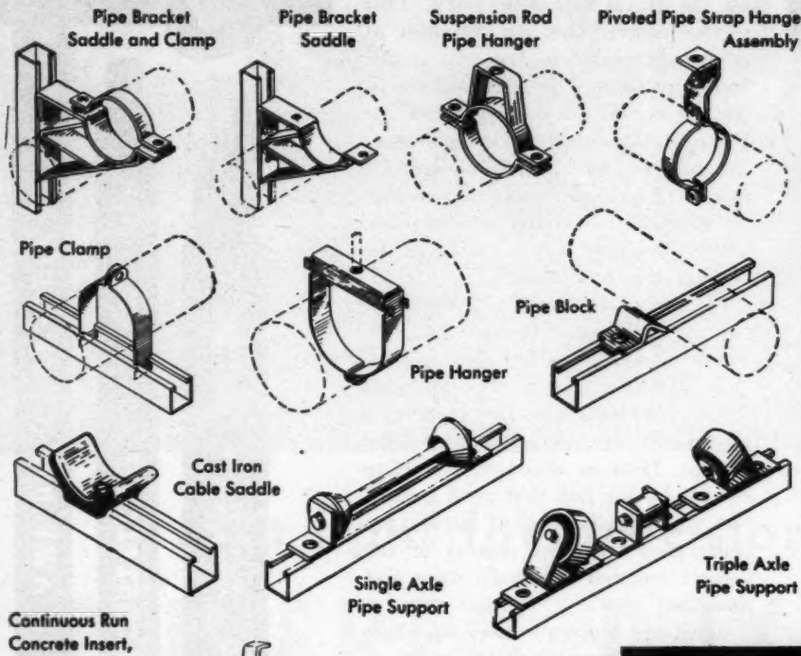
The present practice is a departure from the World War II system, under which defense construction was handled by the works and buildings directorates of the services concerned.

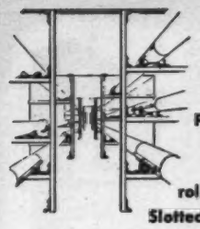
There are three classifications in the current building program of Defense Construction Ltd. Class 1 includes permanent buildings of solid masonry at long-established Naval, Army and Air Force bases. Class 2 is comprised of buildings which combine a structural steel or concrete framework with wooden

(*Continued on page 248*)

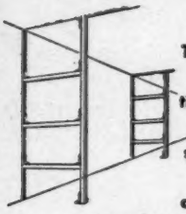
UNISTRUT *Suspends, Supports, Frames* *Mechanical Piping* in one Great Flexible System!

● Unistrut is erected quickly, easily, with a minimum of engineering detailing—permits adjustments, changes or additions on the job or later—assures exact pitch or slope. No drilling, welding, special tools or equipment needed. Unistrut includes metal channel, framing fittings, concrete inserts, clamps, hangers and other standard parts which combine to form the world's most flexible system of support or suspension. Try Unistrut on your next piping job—save time, cut costs.

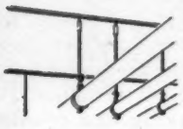




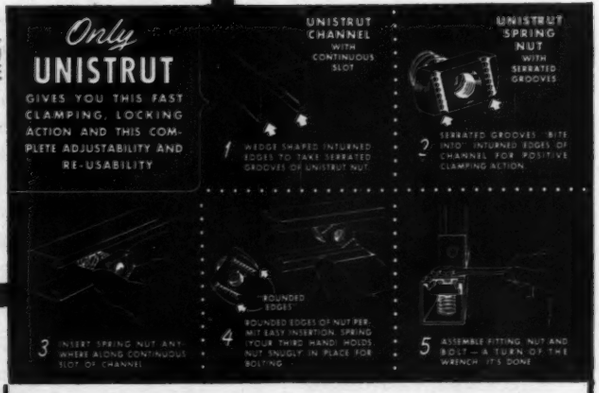
Typical piping installation supported by Unistrut framework, concrete inserts and roller pipe supports. Slotted Unistrut channel permits attachment of fittings at any point desired.



Tunnel job showing how Unistrut continuous run concrete inserts may be installed vertically or horizontally or at any angle required. Attachments made anywhere along slotted channel without disturbing existing connections.



Here are Unistrut continuous run concrete inserts in ceiling, and Unistrut hangers clamped to suspended pipes. For racking heavy overhead pipe runs, Unistrut trapeze assemblies (not illustrated) are ideal.



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Control Equipment Co. Ltd. Montreal

THE RECORD REPORTS

CANADA

(*Continued from page 246*)

partitions or outside walls. Class 3 consists of all-wooden construction except for concrete foundations and concrete floor slabs.

The masonry buildings of Class 1 will be used almost entirely in construction for the Royal Canadian Navy. That service concentrates its activities at permanent bases on the two coasts. Some structures of this type will also be erected at the main Army and Air Force establishments, though preference will be given to Class 2 buildings for reasons of economy where they fit into the general construction pattern. Elsewhere, emphasis will be laid on the wooden structures of Class 3.

During the first nine months of the current fiscal year, $700 million dollars' worth of defense orders were placed. Only about one sixth of this sum went for construction, but the proportion is expected to grow with the passing months. There is, of course, a problem created by the fact that great quantities of materials in short supply are being used for other aspects of the defense program — aircraft, ships and munitions.

Assistance is given to the contractors in establishing priorities for construction work. So far the system has been on a strictly voluntary basis on the part of suppliers and manufacturers. Generally speaking, all that a contractor or subcontractor needs to do is to enter on his orders the contract number prefixed by four letters signifying the government agency for which the work is being done. Where necessary, the Materials Expediting Section of Defense Construction Ltd. speeds up deliveries by directly contacting suppliers or by finding alternative sources of supply. It also assists Canadian contractors and their suppliers to obtain defense order ratings on materials from the U. S.

The various defense jobs are let by tender, with preference given to contractors and suppliers who quote on a firm price basis. The escalator type of contract, in which the cost of construction rises with increased material prices and wage rates, is frowned upon as encouraging further inflation.

(*Continued on page 250*)

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Provide workers with smoothly diffused daylight—filtered through Frosted *Aklo** Glass. This blue-green glass cuts down glare. It's pleasing to the eyes—much like the color of sun-glasses.

Aklo Glass excludes three times as much sun heat as ordinary glass. It soaks up sun heat—up to 70%—and reradiates half of it back outdoors. Result . . . cooler interiors. People can work comfortably near large windows in hot weather. Less load on air-conditioning equipment. Less spoilage of materials.

As you see new plants springing up around the country, note how many are glazed with blue-green heat absorbing glass on the south, east and west elevations. They're planned for better seeing — better working conditions — better *production*.

See for yourself how Frosted *Aklo* Glass reduces glare and sun heat. Ask your Libbey·Owens·Ford Glass Distributor for a Radiometer demonstration of its effectiveness. Or mail the coupon. *®

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☐ I would like to see a Radiometer demonstration.

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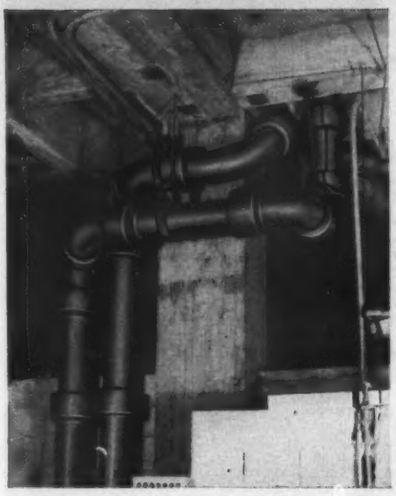
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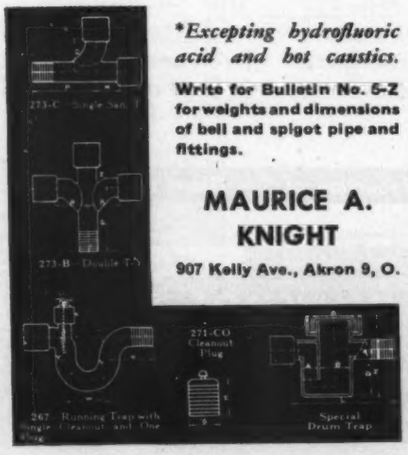


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Knight-Ware has found wide application for more than 40 years in the chemical processing industries, industrial laboratories, pharmaceutical plants, schools, newspaper engraving plants and medical centers.



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MAURICE A. KNIGHT
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THE RECORD REPORTS

CANADA

(*Continued from page 248*)

Architects' Committee Set Up For War on Blight in Toronto

The Toronto Chapter of the Ontario Association of Architects has declared war on ugliness and blight in the city. Plans have been made to set up a special committee on civic beautification to work with citizens and officials to improve the urban scene.

"Toronto architects want to originate projects of permanent value to the community," declares George Gibson, chairman of the chapter. "They are logical leaders in such a movement, since application of their knowledge of planning and design in solving current problems can greatly benefit local residents."

Among the items up for discussion are the wisdom of the city's current plan to turn Toronto Island into a luxury resort; future development of the downtown waterfront; recovery of the city beaches as recreation areas; slum clearance; conversion of the existing city hall to other purposes; and renewal of the fight to get overhanging signs banned from principal streets. Priorities will be assigned to each of these projects; and they will be dealt with in turn.

H. C. Nicholls in Sixth Term As Construction Group Head

Herbert C. Nicholls, Toronto general contractor, was elected president for the sixth time at the recent annual meeting of the National Construction Council.

Organizations affiliated with the Council include professional and manufacturing associations, labor and employer groups.

Three architects are among the members of the Executive Committee. They are: J. H. Craig, A. S. Mathers and Gordon M. West.

Building Curbs Are Blamed For Mounting Unemployment

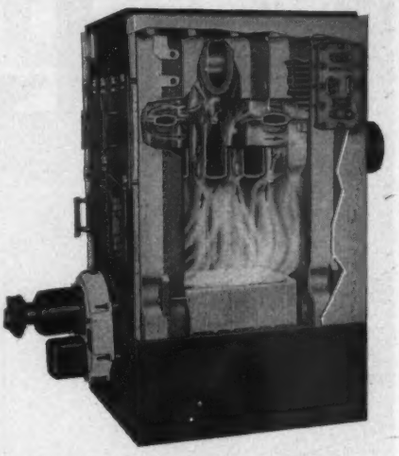
General contractors are increasingly unhappy about the steel situation, and they say that present building regulations raise the spectre of unemployment.

As their spokesman, the Canadian Construction Association is readying a

(*Continued on page 252*)

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THE H. B. SMITH "2,000" BOILER-BURNER UNIT

Take full advantage of forced hot water heat by planning to provide for heavy domestic hot water requirements with a tankless heater built in the boiler. This is the *lowest first cost* and *lowest operating cost* method of supplying hot water.

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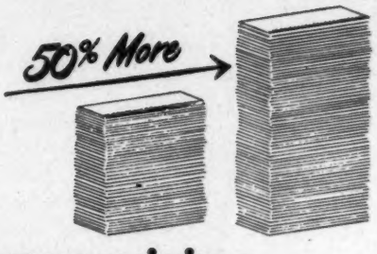
Architects: Why you should specify NIBROC® cabinets

nearly 1 in every 4 towels used in industry, schools, hospitals, and other institutions is Nibroc



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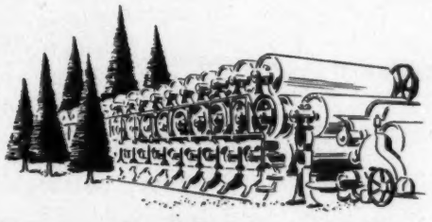
less servicing

is required with Nibroc cabinets. They hold up to 50% more towels than ordinary cabinets.



fast flexible service

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of Nibroc towels is available year in and year out—made by one company from timber-cutting to finishing. One Brown Company machine alone, called "Mister Nibroc," produces nearly 30 million towels daily.

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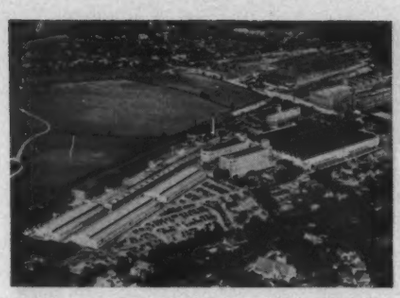
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*City*_____ *Zone*____ *State*_____

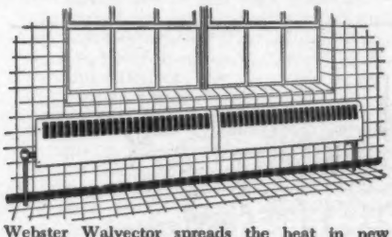


Aerial view of Textile Machine Works, Reading, Pa., world's largest manufacturers of full-fashioned knitting machinery, spring-beard needles, and rotary braiding machines.

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Plant expansion is practically continuous at the famed Textile Machine Works in Reading, Pa. On August 29, 1900, Textile Machine Works bought their first Webster Steam Heating Equipment. Today the entire plant is Webster-equipped, old buildings and new.



Webster Walvector spreads the heat in new power house.

Heating comfort is provided for approximately 4,000 employees in buildings that total 400,000 square feet of floor space.

In new office sections, Webster Walvector is used to spread the heat evenly along every outside wall. Heating requirements in certain new plant sections are met with Webster-Nesbitt Unit Heaters.

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THE RECORD REPORTS

CANADA

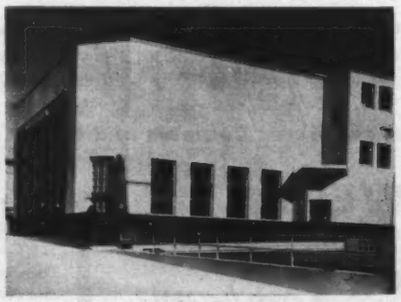
(*Continued from page 250*)

brief to be submitted to the Minister of Trade & Commerce requesting increased allocation of steel for building purposes. The document will point out that defense projects largely contributed to the doubling of contract awards in the first four months of 1951, compared with the same period in 1950; that Canadian regulations are not as flexible as those in the U. S., which permit erection of buildings essential to public health or welfare. The brief will argue that — again unlike the U. S. — Canada has restricted only one industry, construction, as to its steel requirements and that the time has come to work out a more balanced distribution of the scarce metal.

"Unemployment in the building trades already exists," C.C.A. President Robert Drummond explains, "and unless something is done, it may get worse. Heavy construction projects, on which current emphasis is laid, employ a minimum of field and off-site labor.

"The remedy is to modify existing steel orders to permit, in special circumstances, erection of light steel-framed industrial and commercial buildings now on the forbidden list. If this is possible, due to supply limitations, then other industries should be controlled as to their use of steel. It is unfair to penalize one industry by forcing it to assume all

(*Continued on page 254*)



Sharp & Thompson, Berwick & Pratt, of Vancouver, were architects for Canada's first drive-in bank, Vancouver branch of Bank of Montreal. Large parking area is visible in right foreground of photograph

Refinite's
WATER TREATMENT
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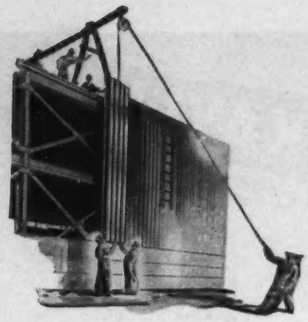
AND THESE "NEIGHBORLY" DISTRICT OFFICES

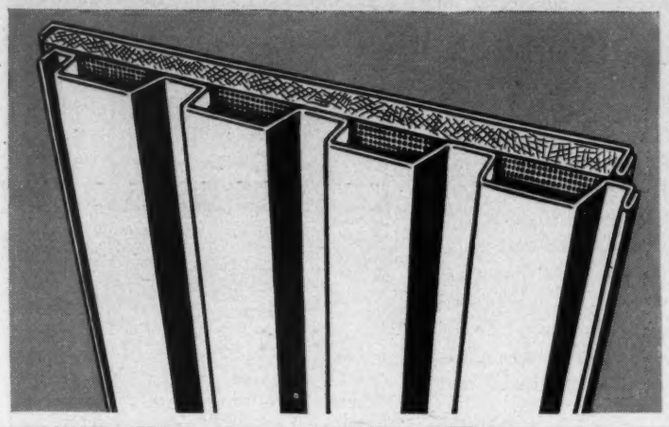
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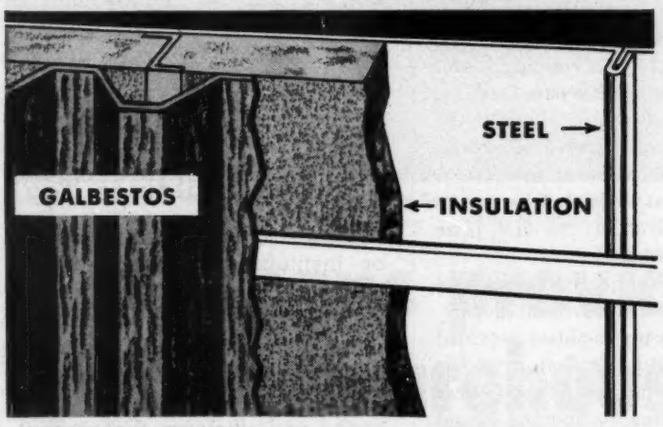




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Factory-assembled Q-Panels go up quick—50 sq. ft. in nine minutes. Only a small crew is needed to attach panel to frame. Perfect for powerhouses, administration, research and laboratory buildings. The distinctive fluted surface provides an interesting wall texture.

WEIGHT	SIZE	INSULATION	FINISHES*
In Steel—6 lbs./sq. ft.	2' wide; lengths up to 25' depending on material used.	Complete panel is 3¼" thick with insulation value superior to a 12" masonry wall with furred plaster. U-factor—.14 in aluminum; .18 in steel.	Steel, aluminum, stainless, Galbestos metal**. *Depending on availability.



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Factory-engineered for quick field assembly, G-Panels provide commercial and industrial buildings with good-looking, maintenance-free walls. G-Panels are insulated, lightweight and capable of long spans to reduce the over-all weight of your building. G-Panels have the advantage of Top-Speed Fastening, a Robertson method by which greater areas of walls can be installed per crew. All work is done from the outside, eliminating interior scaffolding.

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**THIS IS GALBESTOS METAL



Steel sheet with asbestos felt metallically bonded to it. The felt is then impregnated with asphalt and waterproofed. The bond is inseparable, to all purposes forming a new kind of material. Maroon, black or aluminum color; fabricated in a variety of shapes.

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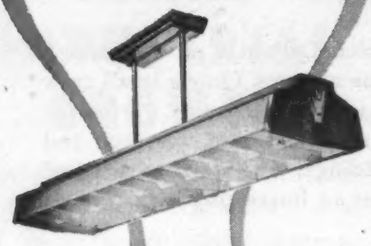
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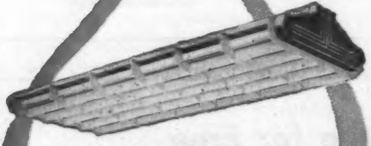
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THE RECORD REPORTS

CANADA

(*Continued from page 252*)

the burden of unemployment. If that must come, it should be shared by all industries."

On the first quarter, Canada's available steel tonnage increased over last year. Imports rose by 120,000 tons and domestic capacity by 100,000 tons. Production of plate was up 18 per cent, structural steel 10 per cent and reinforcing steel 100 per cent. Federal officials claim there is no stockpiling of Canadian steel, and point out that wood construction may often be substituted for steel. The rub is that wood is not suitable for all types of structures, nor is it always approved by provincial and municipal codes.

Craftsmanship Award Made At Ryerson Commencement

Colin Tranmer of Fort William received the Craftsmanship Award recently presented by the Ontario Association of Architects at graduation ceremonies held by the building trades training school at the Ryerson Institute of Technology, Toronto. He was the second-year apprentice who, after winning first prize in his own trade, sheet metal, was judged by his teachers to be the most proficient of the first prize winners in all eight trades.

The apprenticeship training school is operated by the provincial department of labor, using facilities provided at Ryerson Institute. A feature of the program is the taking of apprentices from the job, during the first and second year of their indenture, and sending them to the training school where they receive instruction in the fundamentals and finer points of their trade.

Dignitaries from the architectural profession, the provincial government and the construction industry saw Earle L. Sheppard, president of the Ontario Association of Architects, make the presentation.

Referring to it as an award for proficiency, Mr. Sheppard said: "I would like to add that it should also be for personal integrity, for without the latter, the former is impossible. Possibly the greatest need in industry today is for men who can and will put their wholehearted interest and effort in the work they do."

(*Continued on page 256*)

40 feet a second!



VA Hospital, Omaha, Nebraska. Architects and engineers: Ellerbe & Co., and Leo A. Daly & Co.

Grover Transitubes shrink the distance between hospital departments and buildings — operate quickly and so quietly that a light is needed to signal the carrier's arrival. Records, instructions — even small instruments and medicines — streak through the tubes at 40 feet a second!

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Bethlehem Longspan Joists provide greater usable floor space in H. J. Dowd Co., Inc. warehouse, Cambridge, Mass. Contractor: Earl Brown, Inc., Malden, Mass.; Architect: E. K. True, Concord, Mass.

Longspans provide greater floor space in warehouses and factories

When designing a warehouse or factory building, take advantage of the greater floor space afforded by the use of Bethlehem Longspan Steel Joists.

With Bethlehem Longspan Joists used as roof supports, greater floor space is possible because there is less need for interior columns. In fact, with these joists, floor areas up to 64 ft across can be column-free. Bethlehem Longspans also reduce the need for pilasters. Besides, they save construction time because piping, conduits and ducts can be run through the open webs of the joists.

Bethlehem Longspans reach the job completely fabricated and clearly marked, ready for installation. They feature simplicity of design, and come in two types: underslung construction with top-bearing ends, and bottom-bearing construction with square ends.

They're good joists to keep in mind when planning your next industrial building.

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THE RECORD REPORTS

CANADA
(*Continued from page 254*)

Seaway Poses Planning Job; Ontario Urged to Start Now

Harold Clark, president of the Community Planning Association of Canada, thinks Ontario should prepare now to meet the relocation and growth problems that will face it when the St. Lawrence Seaway goes ahead.

In a recent interview, Mr. Clark pointed out that the proposals for the International Rapids section of the river amount to far more than the building of dams and locks and the hooking up of wires and dynamos.

"Parts of our railway and highway systems, and all that goes with them, will have to be nudged over," he said. "More important than these things which can be drawn to scale and blueprinted are the needs of the people — farmers, factory hands, shopkeepers, resort owners — who live on the spot now or who will be attracted to it when the first ocean vessel sails through and the first horsepower is drawn off."

All Canada has a stake in the seaway and power development, but the C.P.A.C. president feels that the citizens most directly concerned, those whose homes and livelihoods are affected, should be given as large a share as possible in formulating plans for their future. A choice is offered, he says: either local possessions, interests and ideas, along with tremendous community planning opportunities, can be ignored; or they can be employed to demonstrate how a gigantic national project can benefit the people who must live with it. He cites development of the Tennessee Valley in the U. S. as a worthy precedent that shows what can be done.

Without waiting for the green light from Washington or Ottawa, Mr. Clark proposes that Ontario should set up a provincial seaway committee, representing all political parties, and provide it with the technical help it requires.

"To such a committee, local groups and national bodies could tell their stories and explain their hopes and aspirations," Mr. Clark suggests. "The committee's task would be a big one — to take the measure of the job to be done in changing the face and figure of a key region of Ontario and the nation."



When planning the finish of your walls and ceilings, you, no doubt, consider lime plaster finish.

No good, or even economical, substitute for this time-honored material has ever been found.

Monolithic, smooth and clean, it lends itself to any decorative treatment. It is durable, vermin and rodent proof, fire safe, and accoustically right.

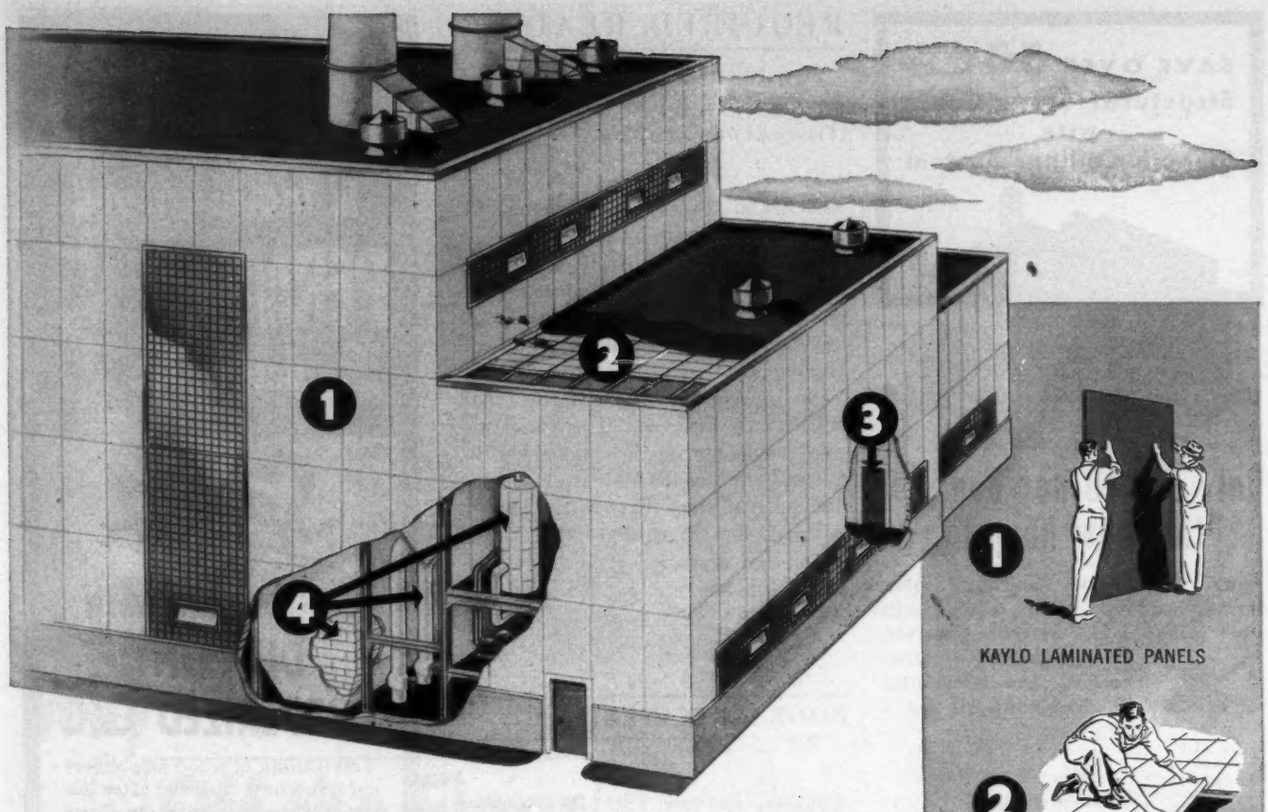
And when specifying plaster, you should consider Ohio White Finish first. Scientifically processed from the world's purest dolomitic limestone, it is always 99½% pure. There is none better.

Ohio White Finish and *Hawk Spread* are our identical brands of hydrated finishing lime. *Ohio White Autoclaved Finish* meets the new Federal Specifications for finishing hydrated lime. It requires no soaking.

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The Ohio Hydrate & Supply Co.





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A Better Material For Many Uses

For better roof decks, walls and firedoors—and heat insulation for plant equipment—Kaylo hydrous calcium silicate offers an unmatched combination of advantages.

This versatile material—a chemical compound, *not glass* — is incombustible and inorganic; it resists moisture damage and other destructive elements. What's more, Kaylo calcium silicate has exceptional insulating value, dimensional stability, high strength and light weight — a basic advancement in building and insulating material.

For new construction, modernization or maintenance replacement, consider the advantages offered by products made of Kaylo calcium silicate. Get complete details on Kaylo products—write Dept. N-127, Owens-Illinois Glass Company, Kaylo Division, Toledo 1, Ohio.



KAYLO® ... *first in calcium silicate*

...*pioneered by* OWENS-ILLINOIS Glass Company

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Smooth Ceilings System

Metropolitan Life Building, Dept. W
MINNEAPOLIS, MINNESOTA

REQUIRED READING

(*Continued from page 32*)

and Eckbo, Royston & Williams, for example; others are by students.

The book is not solely a pictorial presentation, however: it includes several brief text pieces on landscape architecture, among them one by Joseph Hudnut entitled, "This Practice is a Very Ancient One — and Hardier than is Generally Believed." There is a two-page comment on the profession by Lester Collins of the Harvard faculty; a discussion of plant materials by Donald Wyman, horticulturist of the Arnold Arboretum; and a report on the Department's field laboratory at Weston, Mass.

BOOKS RECEIVED

Sculpture, Battersea Park 1951. Staples Press, Ltd., London — Catalog of the international open air sculpture exhibition, opened in Battersea Park, May 7.

Architect Isoya Yoshida's Work. Meguro Sholen. The International Architectural Society, Tokyo — A summary of one aspect of contemporary Japanese architecture in photographs and captions (mostly Japanese).

Opportunities in Architecture. By William Thorpe. Vocational Guidance Manuals, Grossett & Dunlap, New York — Definition of the profession, and how to do it, in 112 pages.

Geology, Sociology, Climatology and their influence on Regional Architecture. The Planning Research Centre, School of Architecture, The University of Manitoba — A study of the forces which influence house design in the southern Manitoba region.

Technical Bulletin No. 15. Urban Land Institute, Washington — "Special or Benefit Assessments for Parking Facilities," article by Conya Hardy and David R. Levin.

The Biblical Archaeologist. Pub. by the American Schools of Oriental Research, Vol. XIV, No. 1 — February, 1951, issue features article, "Reconstructing Solomon's Temple," by Paul L. Garber.

Where WOOD is indicated and PERMANENCE demanded

Specify treatment with DU PONT COPPERIZED CZC

You'll think of wood as a *different* structural material after it's pressure-treated with Du Pont Copperized CZC. And here's why. Copperized CZC gives long-lasting protection against termites, fire and decay *without changing* the inherent structural characteristics of wood.

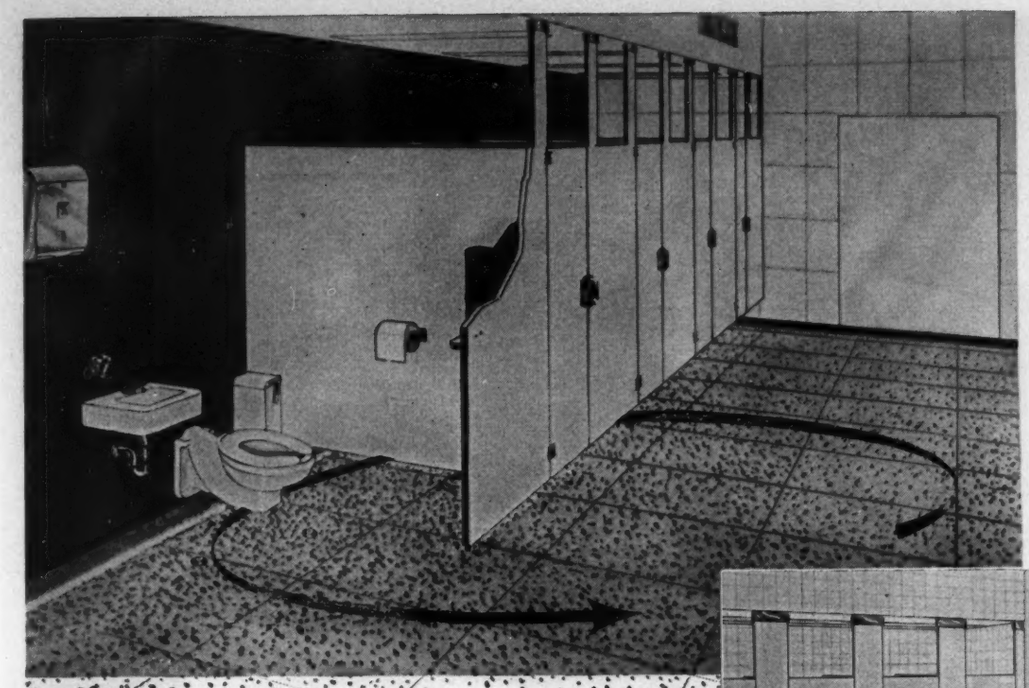
This salt-type wood preservative makes lumber and timber unpalatable to termites . . . kills decay-causing fungi . . . gives a high degree of fire retardance. Copperized CZC does all this while leaving wood clean, paintable, odorless and safe to handle. Sound reasons why you should specify pressure-treatment with Du Pont Copperized CZC.

Full technical details on Copperized CZC available for the asking. Write: E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington 98, Delaware.



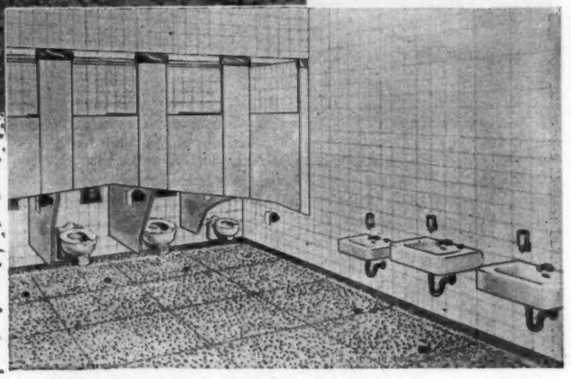
DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



Floors are cleaned faster, easier in this modern ladies' washroom with these off-the-floor fixtures:

1. Wall-hung toilets.
2. Floor foot-flush valves.
3. Wall-hung lavatories.
4. Ceiling-hung partitions.
5. Towel and tissue dispensers, fastened to the wall.



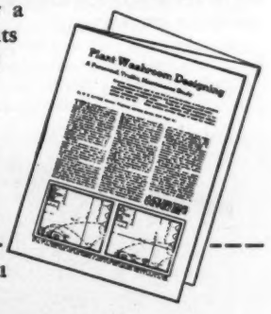
Why Off-the-Floor Fixtures are a "Must" for Modern Washrooms

"Keep the fixtures off the floor!"—A sound recommendation from the plant washroom designer who wants his client to have the best in employee health, morale and efficiency . . . a minimum of absenteeism and wasted man-hours. For example—wall-hung lavatories and toilets with ceiling-hung partitions aid a faster, easier cleaning operation. They reduce illness and absenteeism, too, by doing away with filth-catching corners and crevices, permitting better ventilation.

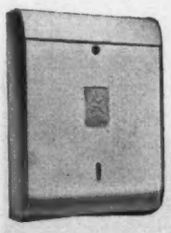
Labor and administration costs generally eat up 85-95% of a typical operation's sanitation budget. Stretch this figure out over the life of a building—50 years or more—and you'll realize the full importance of passing every possible washroom labor saving on to your client in his new building.

Advice on off-the-floor fixtures is only one of many services offered by your Washroom Advisory Service man. Call him in. Get *all* the details—*based on actual experience.* He has the know-how gathered by a group of Scott-trained consultants who have serviced over 500,000 washrooms.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Pennsylvania.



Send for FREE Leaflet...
"Plant Washroom Designing"



SCOTT

Symbol of Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U. S. Pat. Off.

Washroom Advisory Service, Dept. 1
Scott Paper Company
Chester, Pennsylvania

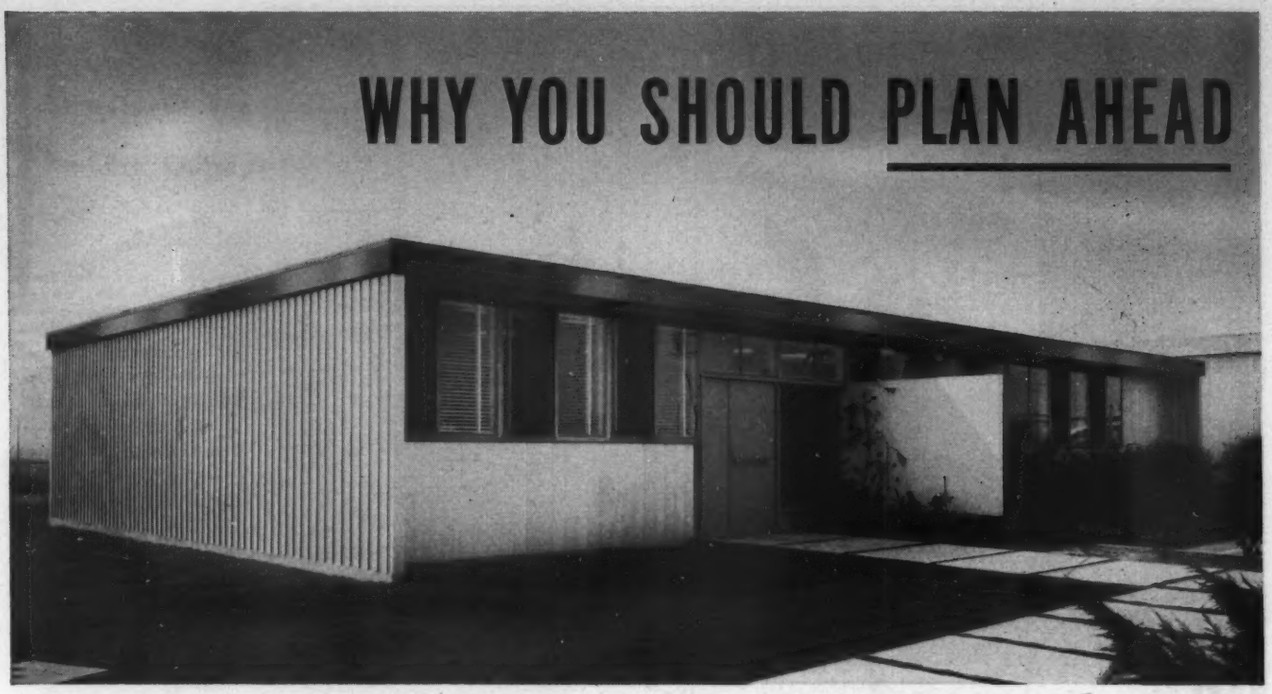
At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, *"Plant Washroom Designing."*

Name_____

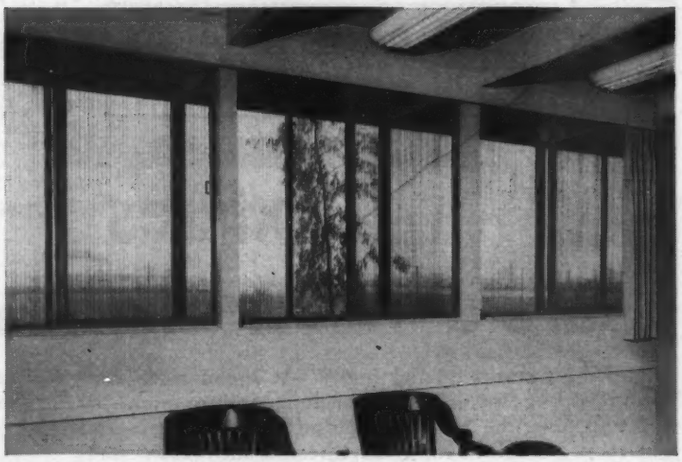
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KAISER ALUMINUM SIDING, applied vertically, gives an effect of added height to the Lane-Wells Company executive offices in Los Angeles. Installed under tension, the curved surface of Kaiser Aluminum Siding is rigid, sound-deadening, insulating. Maintenance costs are low, for the lustrous enamel finish is baked on.



KAISER ALUMINUM SHADE SCREENING on the southwest windows of the Lane-Wells offices cuts glare and heat by stopping the sun's rays outside the glass. Comfortable light and air are freely admitted and visibility to the outside is unobstructed.

THIS LOW-COST industrial structure combines the advantages of Kaiser Aluminum Shade Screening and Siding. The Shade Screening screens out insects and the direct rays of the sun responsible for fading, insures maximum privacy.



WITH ALUMINUM

VAST expansion of production facilities will make aluminum among the most plentiful of building materials!

Kaiser Aluminum alone is increasing its production of primary aluminum by 80 per cent.

This plentiful supply of aluminum will encourage many new uses of this strong, light, rustproof metal in the building fields.

By keeping aluminum in your plans, by using it whenever and wherever you can—*by planning ahead with aluminum*—you'll be better prepared to use it in a wider variety of applications in the future.

You may have to substitute for aluminum

Kaiser Aluminum is helping to meet the needs of national security—supplying vast amounts of aluminum to manufacturers of essential items.

But Kaiser Aluminum building products are still available.

So check with your suppliers before you specify any substitute materials. There's a good chance you'll be able to give your clients the best: *Aluminum!*

Aluminum is the building material of tomorrow

Building materials made of Kaiser Aluminum offer exclusive advantages in design, beauty and quality. Representative applications of Kaiser Aluminum building materials in use today are shown on these pages.

For full information about Kaiser Aluminum building products—and for AIA files—write: Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California. Sales offices in principal cities.

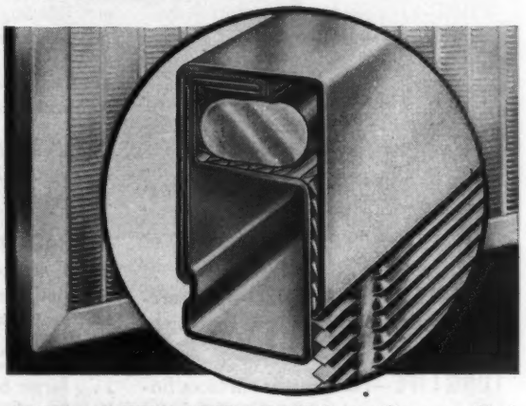
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A major producer of

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KAISER ALUMINUM was used in the ductwork of the John Hancock Mutual Life Insurance Company building at Boston. Because of its lightness, crews were able to install ductwork faster, with less worker fatigue. Easily fabricated on the jobsite, Kaiser Aluminum Utility Sheet cut handling and scrap costs. Never requires painting. Uninsulated, it delivers as much heat as insulated galvanized material.

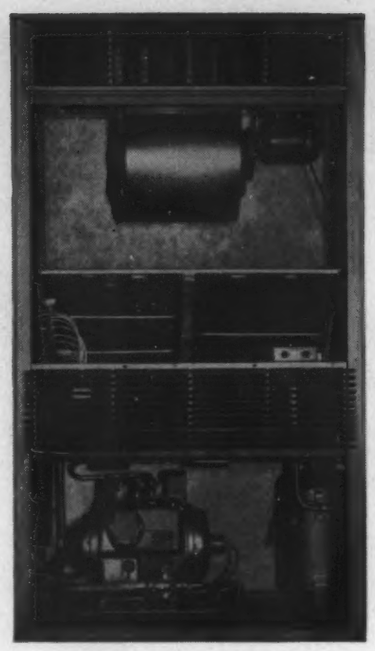


KAISER ALUMINUM SCREEN FRAME is readily assembled from framing sections, trim cover sections and cast aluminum corners. When framing Kaiser Aluminum Shade Screening the spline is used only at the top and bottom of the screen. No screws are needed. The frame may be used with conventional wire cloth screen as well as Kaiser Aluminum Shade Screening.



THIS FISH NET SHED, covered with Kaiser Aluminum Roofing, is designed for a seaside location in a hot climate. The roof is highly resistant to the corrosive action of salt spray from the nearby ocean because Kaiser Aluminum Roofing is *solid* aluminum—not clad or veneered. And Kaiser Aluminum Roofing reflects up to 60 per cent of the sun's rays, which means a reasonably uniform, cool temperature is maintained under the shed.

EVERYTHING YOUR CUSTOMER WANTS



IN A PACKAGE AIR CONDITIONER

Here are the reasons why your customer will be happy with his Worthington Package Air Conditioner:

QUIET—acoustically insulated cabinet . . . no belts to wear or get out of line.

VIBRATION-LESS—smooth-floating multi-mounted compressor . . . dynamically-balanced fan.

TROUBLE-FREE—compressor hermetically-sealed against dust and moisture . . . no pulleys, couplings or seals.

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ECONOMICAL—thermally-insulated . . . large copper-finned cooling coils . . . Worthington Feather* Valves.

Each Worthington unit—3, 5 and 7½ ton sizes**—is built to the same high quality standards as Worthington equipment for engineered systems, such as those described at the right. *Write for Bulletin C1100-B29.*

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in the National Hotel Co. chain



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This building is handled by a 125-ton Worthington air conditioning system comprised of two Freon-12 compressors and one evaporative condenser.

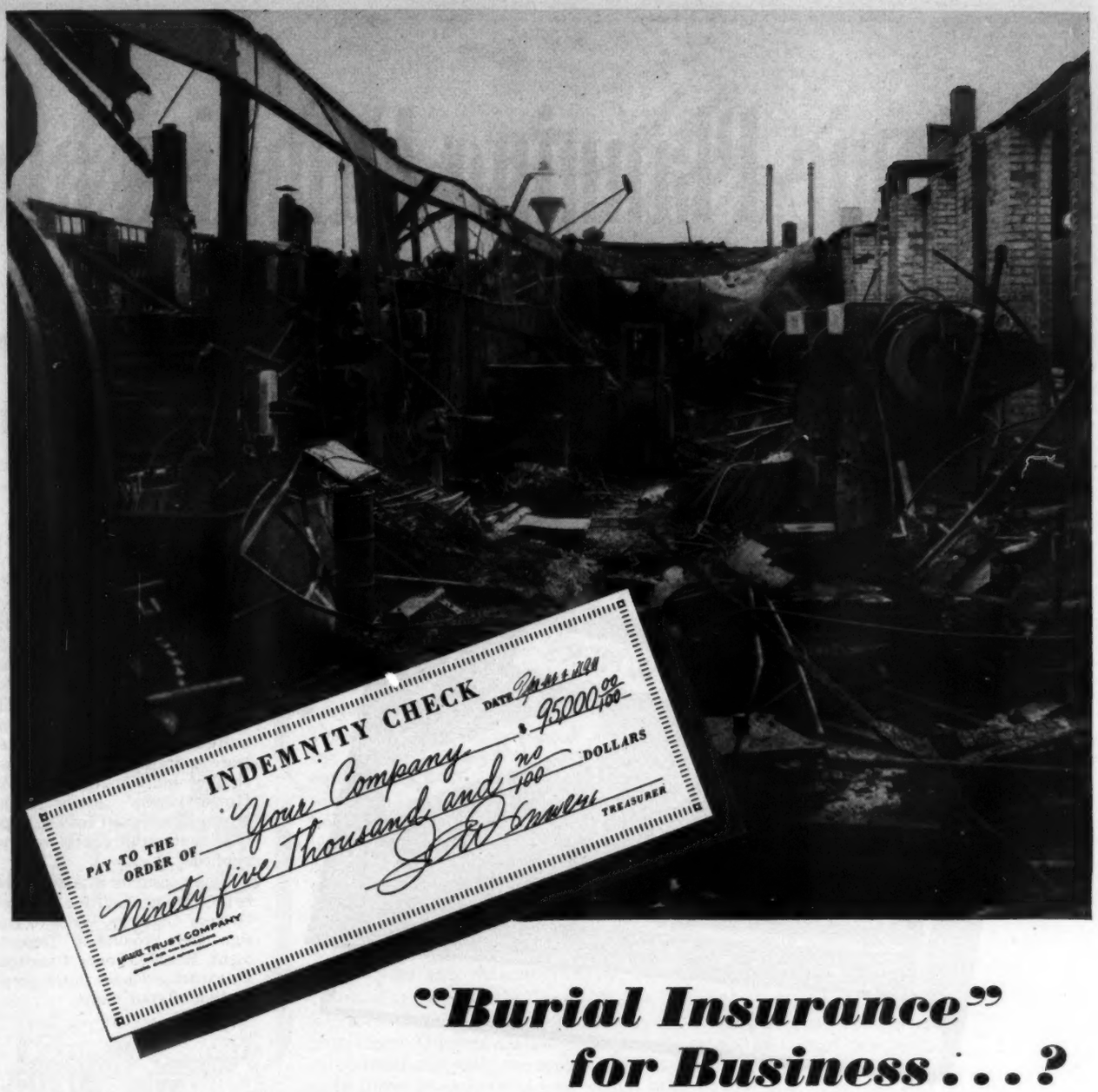
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MORE WORTH WITH WORTHINGTON

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"Burial Insurance" for Business . . . ?

Any business destroyed by fire usually becomes dead as a doornail . . . and stays that way. The records indicate that 2-out-of-5 of *all* burned-out businesses never come back.

For, while it may help cushion the financial loss, no indemnity check can take the place of scarce materials and equipment. No indemnity check can replace invaluable, burned-out records. No indemnity check can bring back lost customers . . . or skilled workmen who have strayed to other jobs.

Therefore, the only true protection for business is to control fires that do start, preventing them from spreading and doing irreparable damage. Fires *can* be controlled by checking them at the source, when they start, with Grinnell Automatic Sprinkler Systems. Seventy years experience proves this.

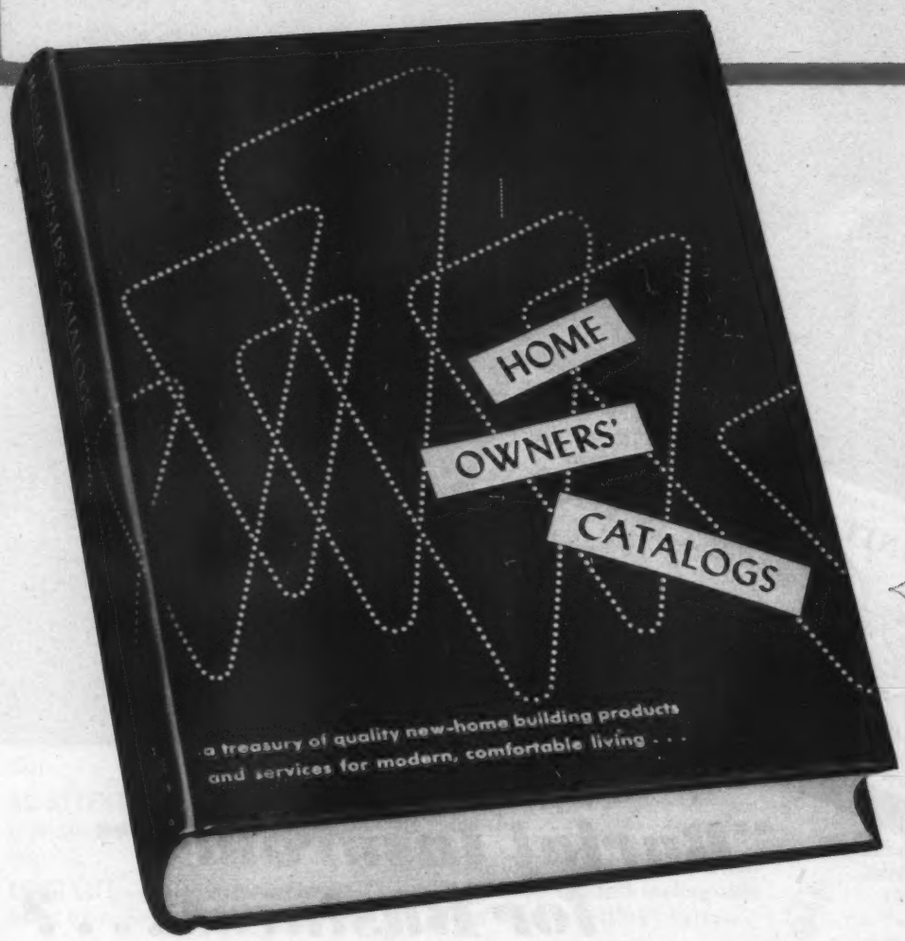
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In factories, hotels, hospitals, schools and theaters, there is a moral obligation upon architects and management to provide the utmost protection of life and property. For your own sake, be sure the lives and property for which you are responsible are protected with Grinnell automatic sprinkler heads — your assurance of positive automatic fire protection.

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Your consumer catalog in this handsome volume will be delivered daily and directly to *active* home-planners...each one carefully selected and screened.

Your consumer catalog in this volume will be constantly consulted by *known buyers*. Researcher Starch reports: "Readership of individual catalogs in Home Owners' Catalogs ranks among the highest for this type of sales literature of any we have studied."

Your consumer catalog can be in the very next edition of Home Owners' Catalogs. Write to Design and Production Department, Home Owners' Catalogs, for expert guidance in the preparation of your insert.

More and more manufacturers are selling through Home Owners' Catalogs!

These firms know that promotional aggressiveness pays off. Their fact-packed product story in the *new* Home Owners' Catalogs sells the rich, ripe '51 custom housing market.

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Three *Important* Questions . . . and Three *Factual* Answers:

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Extremely active! Matter of fact: A survey of current custom home-planners tells the true tale . . . the market is 98% active. Sure, a sprinkling are changing their plans because of prevailing conditions. But are they abandoning home-building plans? No! Are they post-poning their plans? Not appreciably!

They take their time thinking over and solving today's problems, but their plans are not being delayed to any great extent.

2. How vital is this market to you?



Very, very vital! Every custom home-planner must buy or specify build-ing materials, insulation, roofing, windows, plumbing and heating equipment, floor coverings, appliances, furnishings, and 1,001 other new-home products. Every custom home-planner located, screened and bombarded by HOME OWNERS' CATALOGS is in the market for new-home products right now. And every custom home built today is a model for the millions of homes to be built tomorrow. Home-planners are fully aware of existing difficulties—rising prices, government con-trols, scarcity of some materials—but they are going right ahead with their home-building plans.

3. How can you sell this market . . . effectively and economically?



Home-planning families name Home Owners' Catalogs as their *most helpful* source of product information. So . . . why shouldn't *you* investi-gate Home Owners' Catalogs—especially when the cost of this method of distributing your consumer sales literature to *active* home-planners *is in direct proportion to your actual sales possibilities.* Nowhere else is what-you-pay kept so commensurate with what-you-get. Need we say more?

An independent researcher's complete report on the activity in today's quality housing market is yours for the asking. Write to Research De-partment. Home Owners' Catalogs. It's FREE.



ACT NOW! Today's custom housing market sets the styles for tomorrow's mass market!

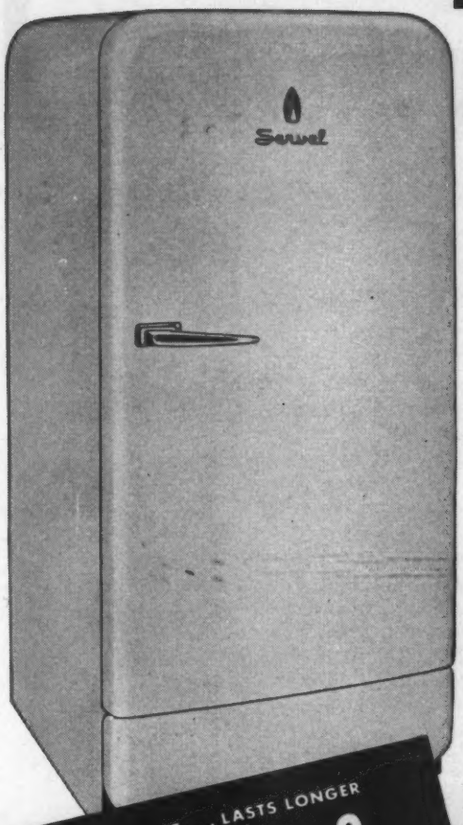
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puts 216 Servels in new Atlanta project



Servel's low maintenance cost is like money in your pocket. It's one of the main reasons Servels were chosen exclusively for the brand-new University Heights Apartments in Atlanta, Georgia.

In all parts of the country, builders of large projects have found that Servel refrigerators are packed with the features most likely to please tenants and owners alike. Only Servel, of all refrigerators, operates without a *single moving part* in its freezing system. There is no machinery to wear out or grow noisy . . . a tiny gas flame does all the work. This advanced freezing system means years of trouble-free refrigeration without expensive repairs.

Tenants have come to expect Servel's silent, dependable refrigeration in the most modern developments. For details on the latest models, write Servel, Inc., Dept. B-17, Evansville 20, Indiana.

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Servel

The GAS Refrigerator



University Heights Apartments, Atlanta, Ga.
Owned by Fred Wilson, built by
Williams Construction Company, Columbus, Ga.



Light.....at work



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Pittsburgh, Pa.
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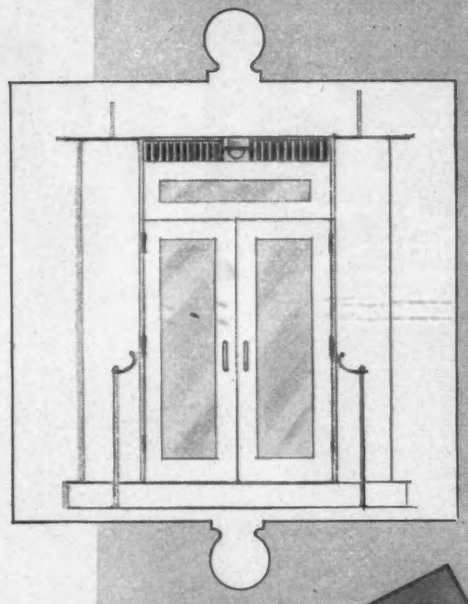
Permaflector Lighting Engineers in All Principal Cities

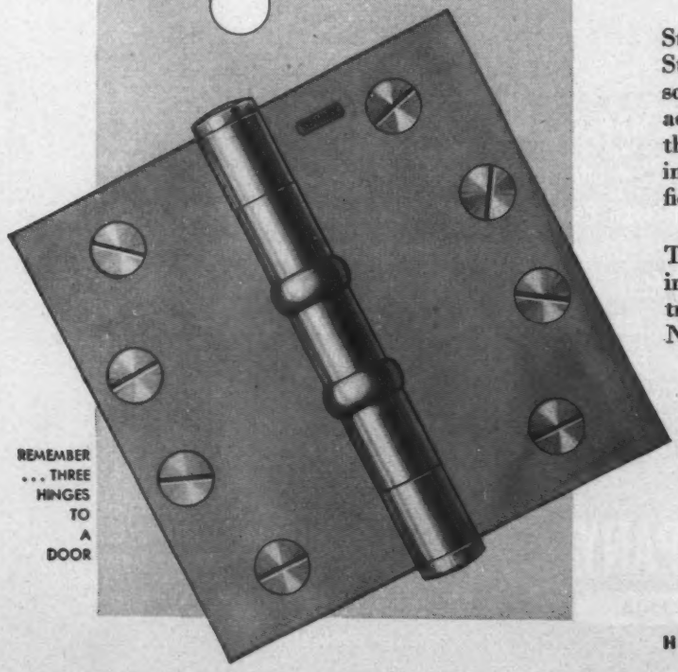
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Send for the booklet "Planned Lighting For Modern Offices". It's the picture story of how others have put Pittsburgh Permaflector Equipment to work in their offices.

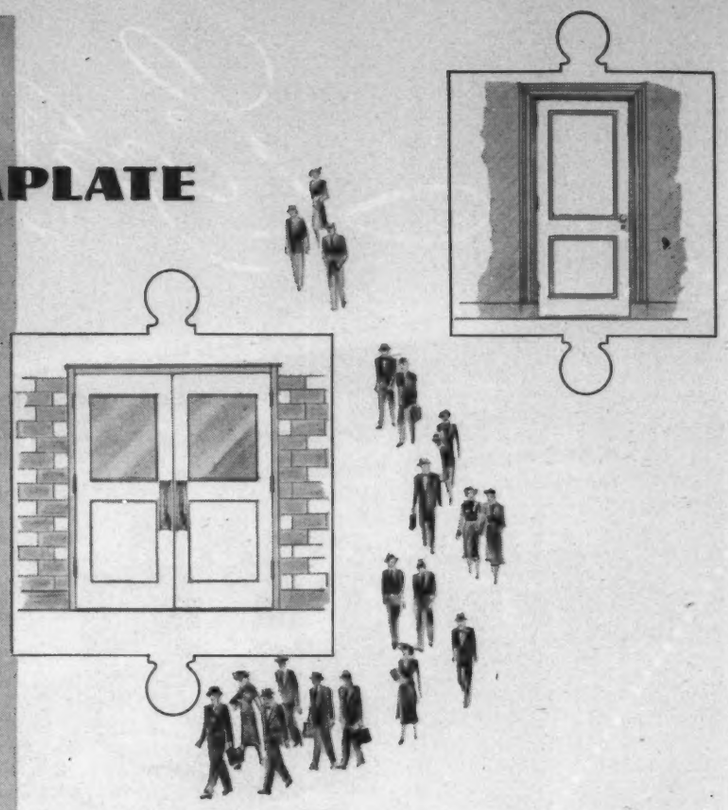
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Stanley Template Butt Hinges are made in steel, brass, bronze, stainless steel, and aluminum. Exact in size and gauge of metal, each Stanley hinge has the class number stamped on the back.

STANLEY

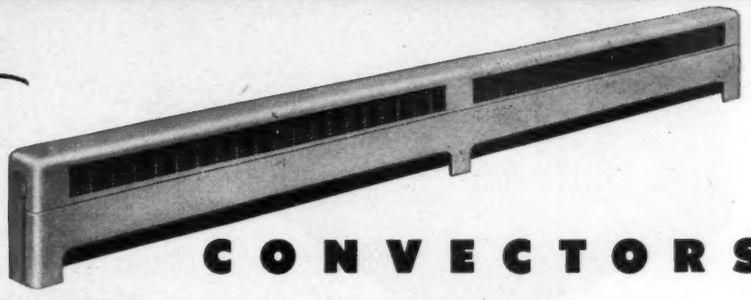
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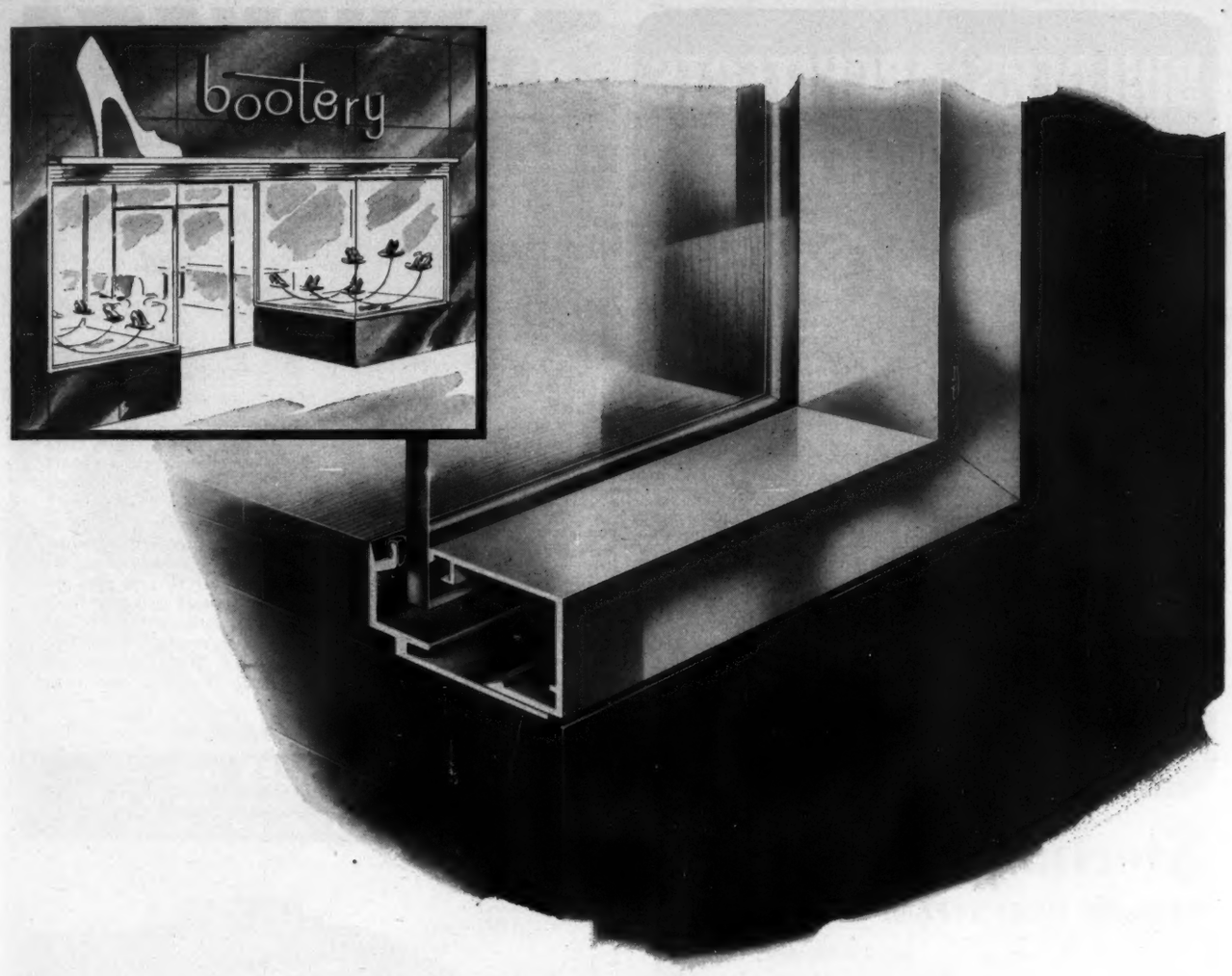
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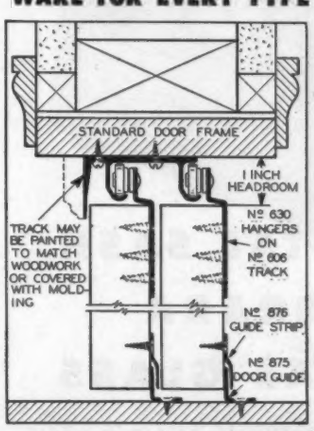
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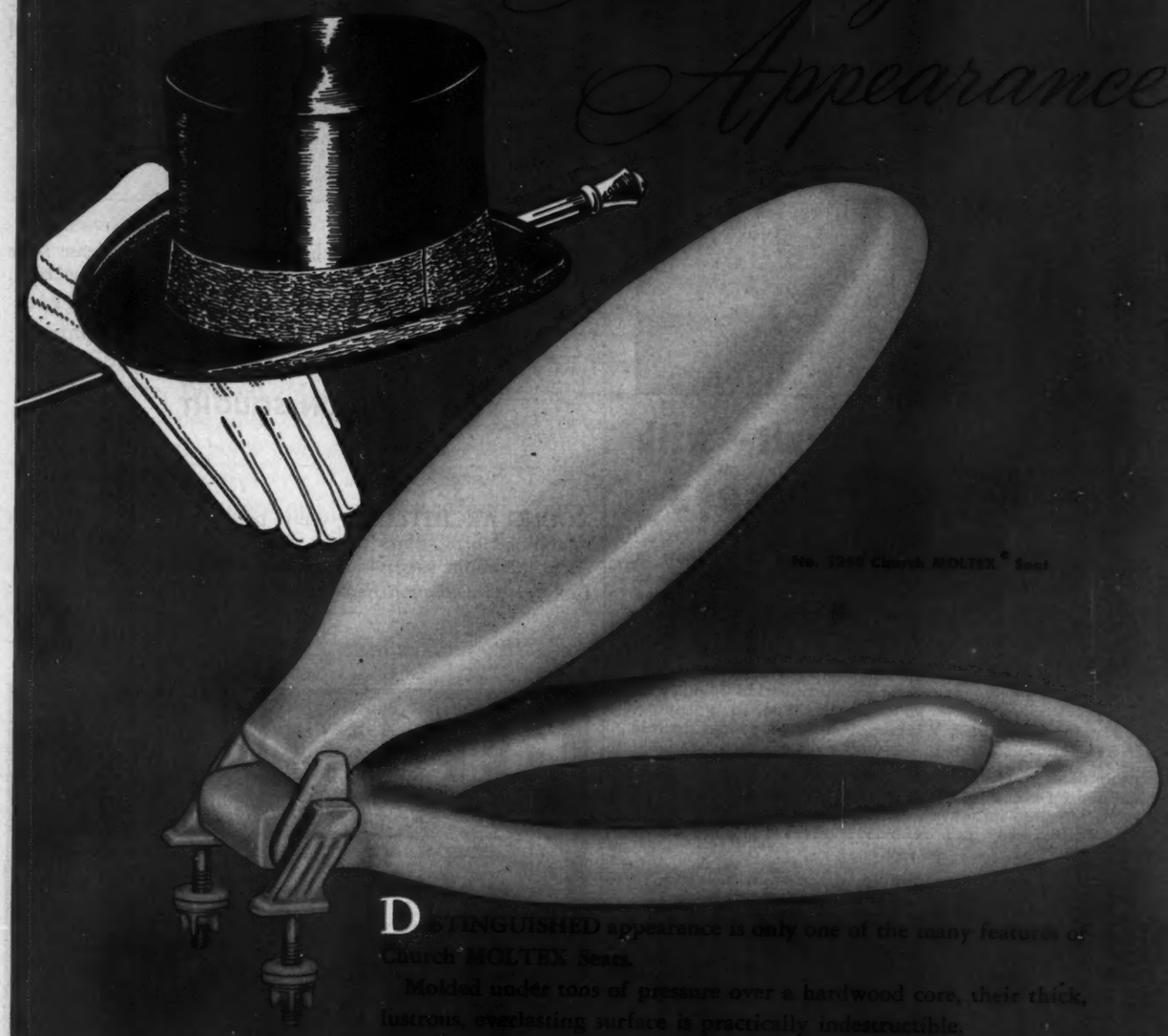
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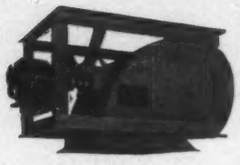
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Check your current Sweet's Architectural File 28E/F for detailed information about Fairbanks-Morse products. If you would like to have handy reprints of this section, we will be glad to supply them.

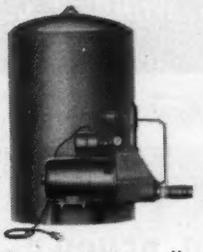
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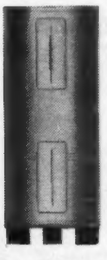
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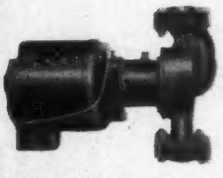
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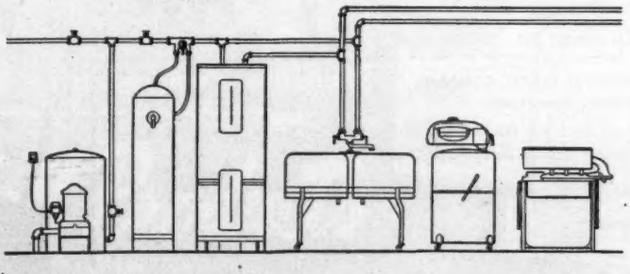


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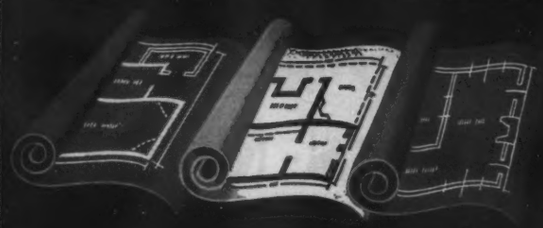


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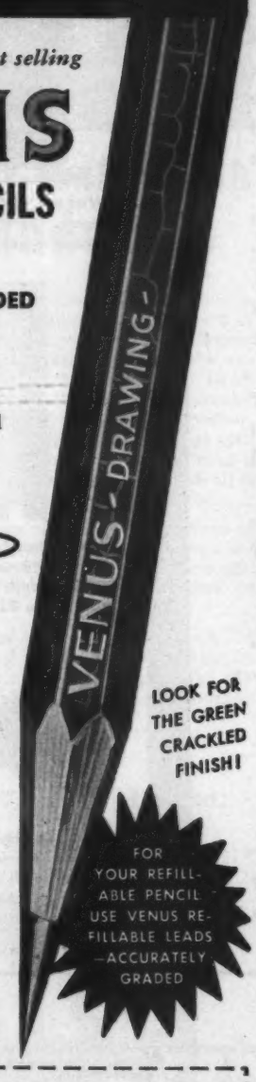
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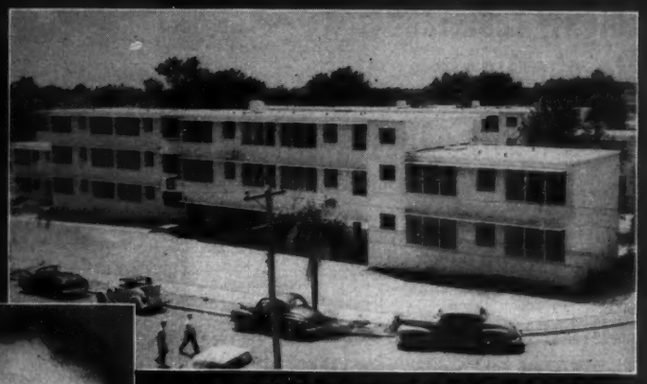
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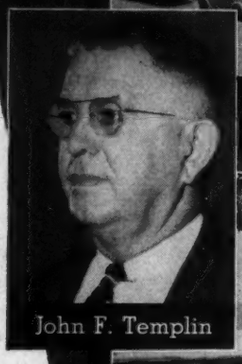
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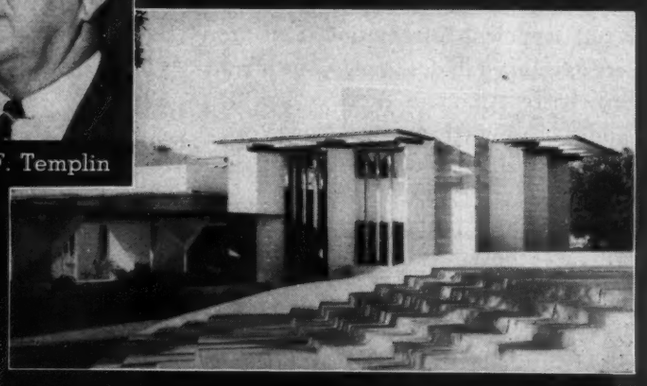
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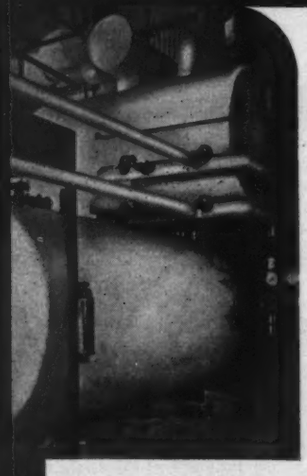
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You can now give your clients complete protection against unsatisfactory floor hardening! Read about the new Lapidolith Guarantee, backed by National Surety Corporation!



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National Saturday Evening Post ads are telling your clients about Lapidolith's Bonded Guarantee. You should have complete facts on hand. Simply mail the coupon below.

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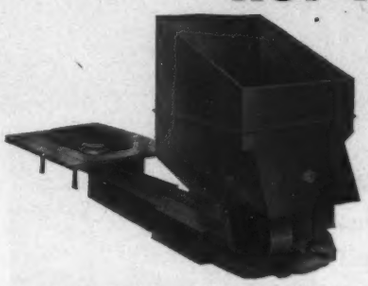
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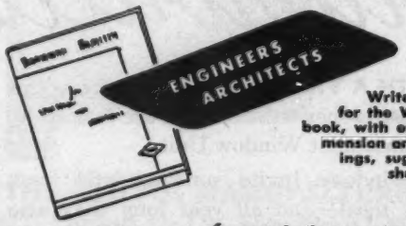


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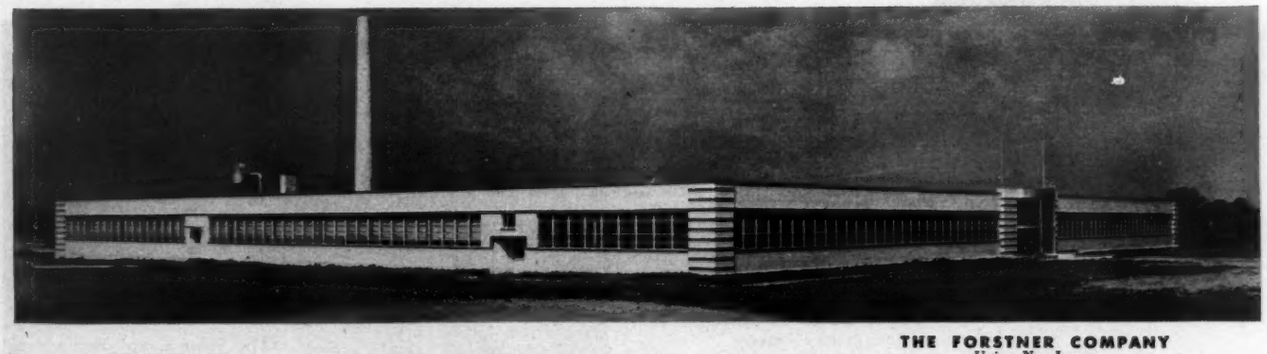
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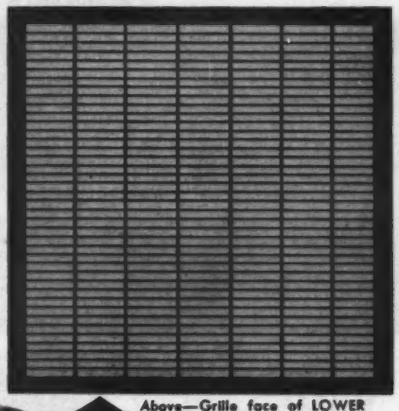
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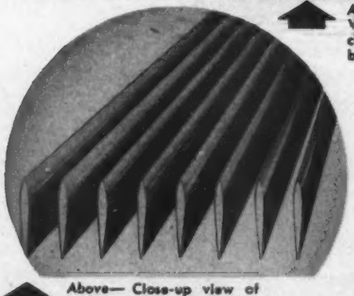
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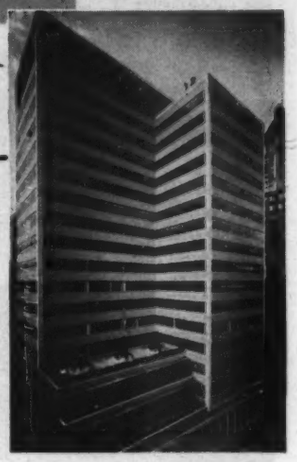
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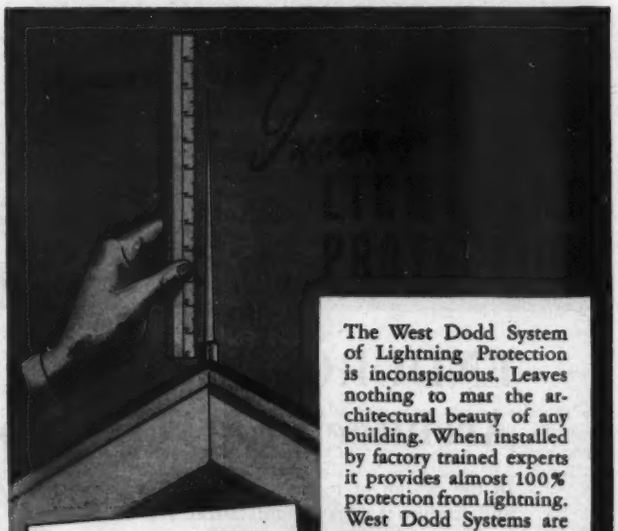
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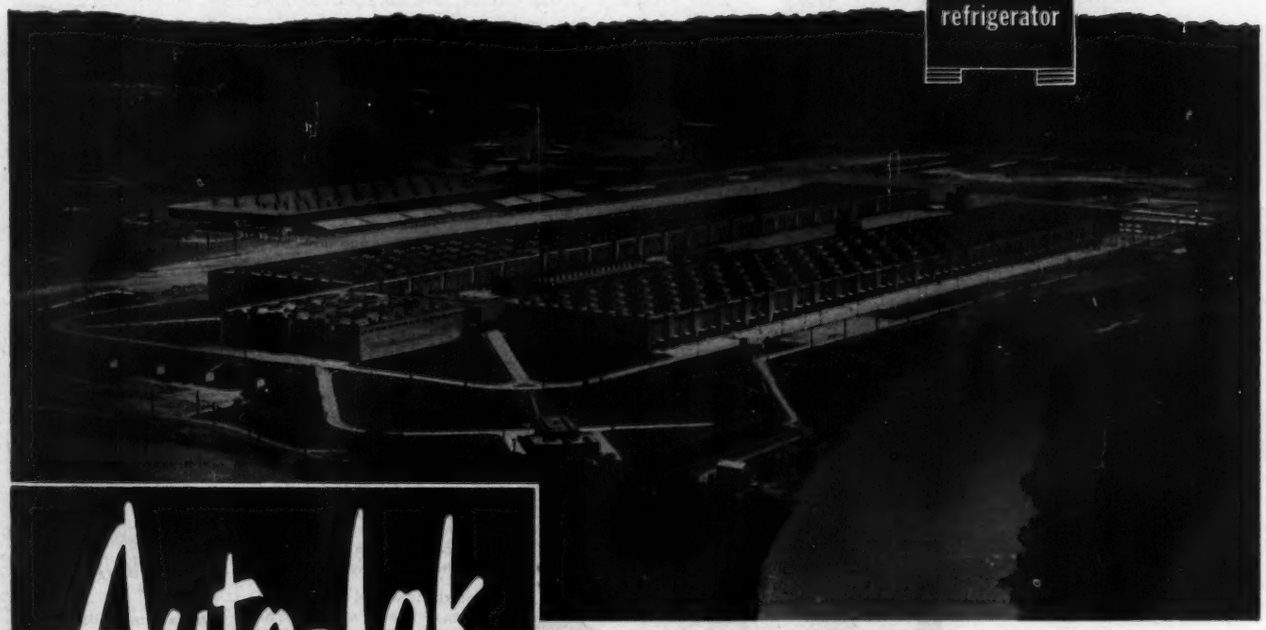
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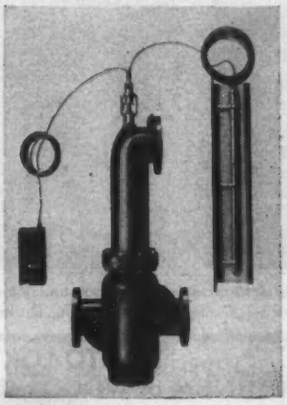


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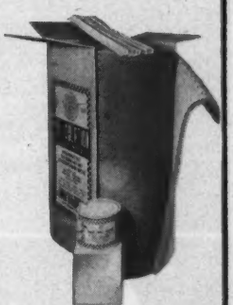
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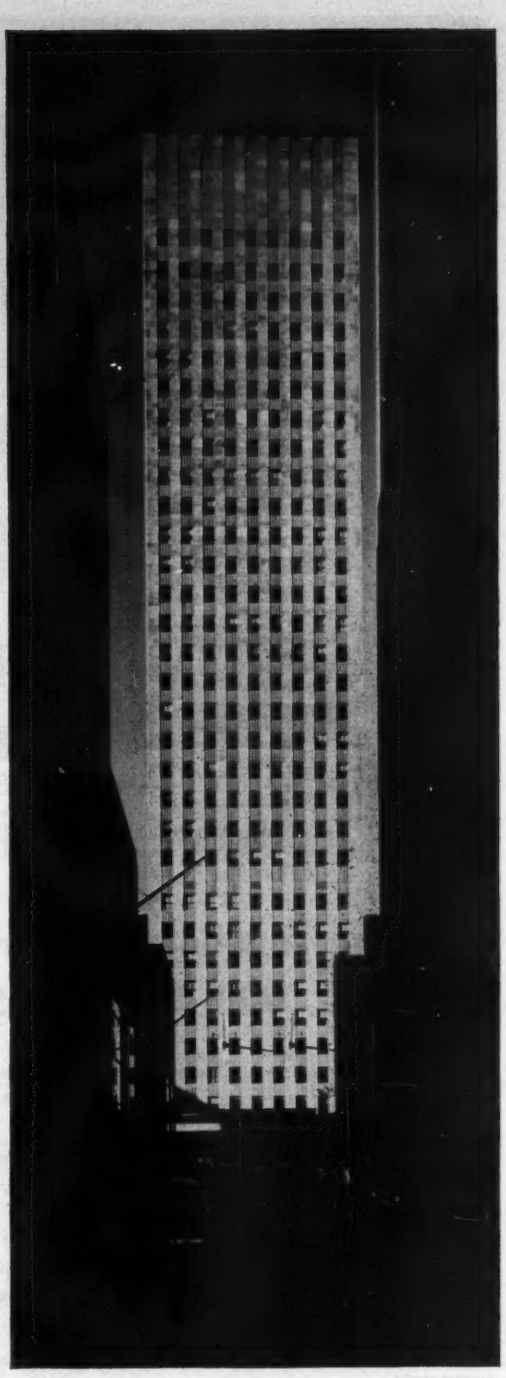
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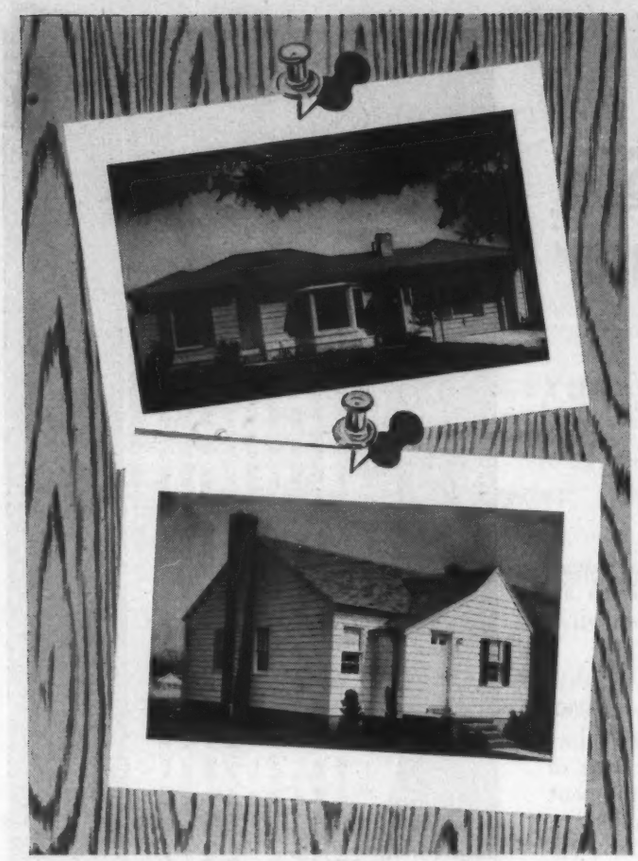
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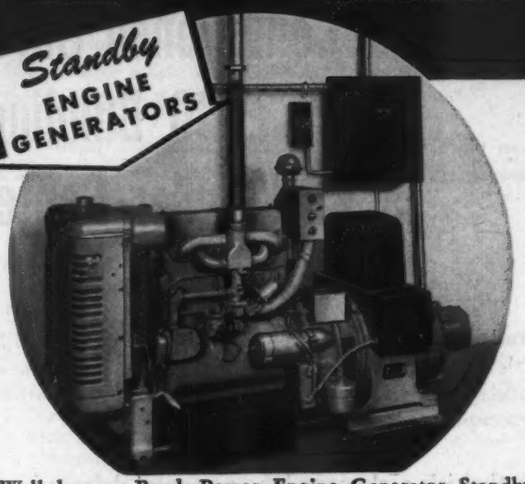
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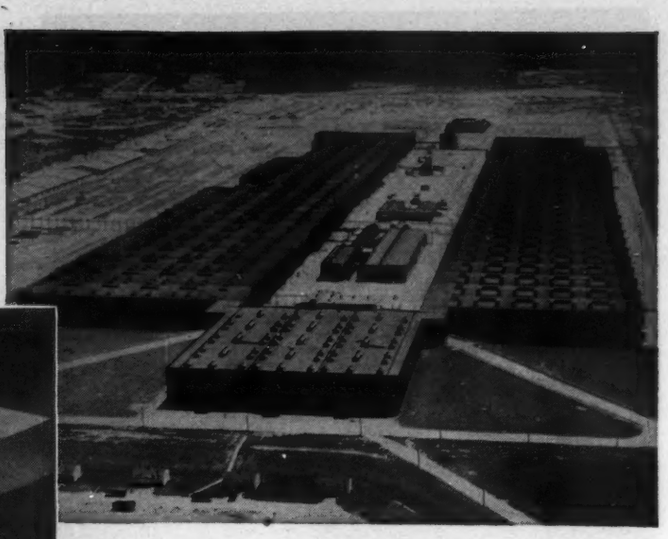


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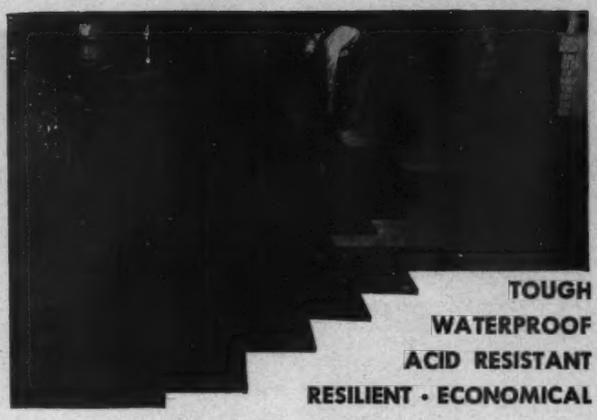
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This is another example illustrating how industrial buildings can be constructed in architectural concrete with all these benefits: (1) distinctive appearance, (2) great strength and durability, (3) firesafety, (4) economy. Being moderate in first cost and requiring little maintenance over a long life, architectural concrete structures render true ***low-annual-cost*** service.

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Whether you are designing an industrial plant like the Loma Linda food factory or one for any other use, architectural concrete is the ideal construction material. Being versatile and adaptable, it can be used to create functional and imposing apartments, schools, hospitals, churches and other structures. Architects find architectural concrete an ideal material to use in giving form to their finest designs, for it can be molded economically into the ornamentation of any design or period. Such ornamentation can be cast integrally with structural parts of the building.

For additional information about designing and building attractive, economical architectural concrete structures write for free literature. It is distributed only in the U. S. and Canada.

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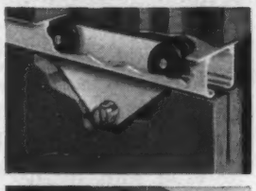
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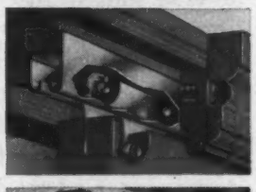
SERIES 300

Extremely popular because of its varied uses. Like all other Kennatrack, it is top mounted. No floor track. Exclusive mounting feature requires minimum head room. Each door has not 2 . . . not 4 . . . but EIGHT neoprene-tired wheels.



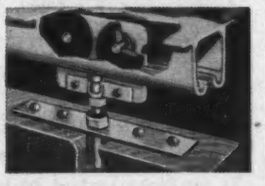
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Special design for open pocket sliding doors. It is same as Series 300, except for special flange which simplifies mounting in open pocket. Doors run not on 2 . . . not on 4 . . . but on EIGHT neoprene-tired wheels.



SERIES 400

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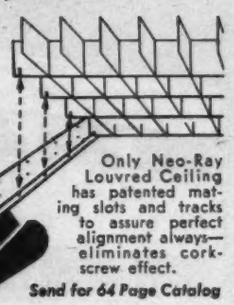
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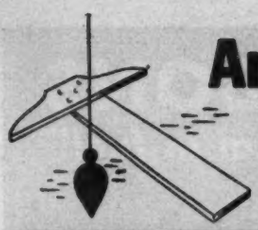


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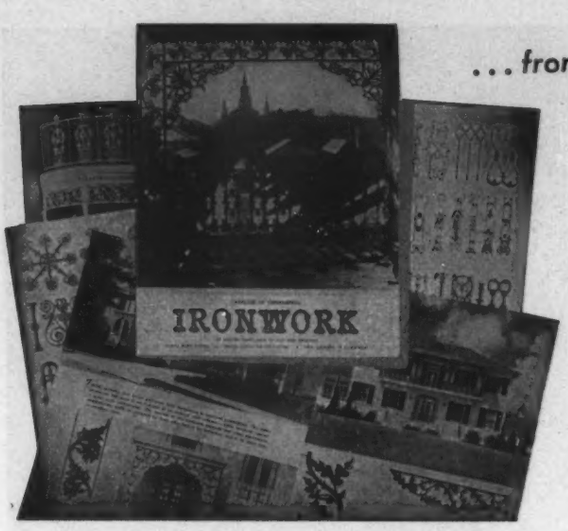
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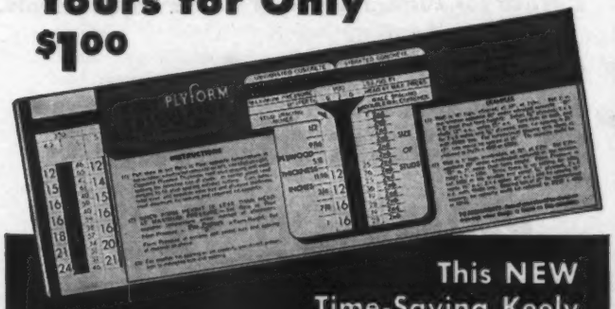
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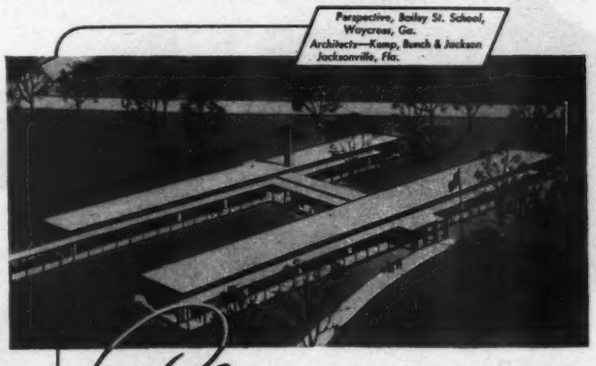
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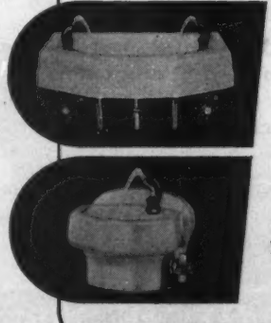
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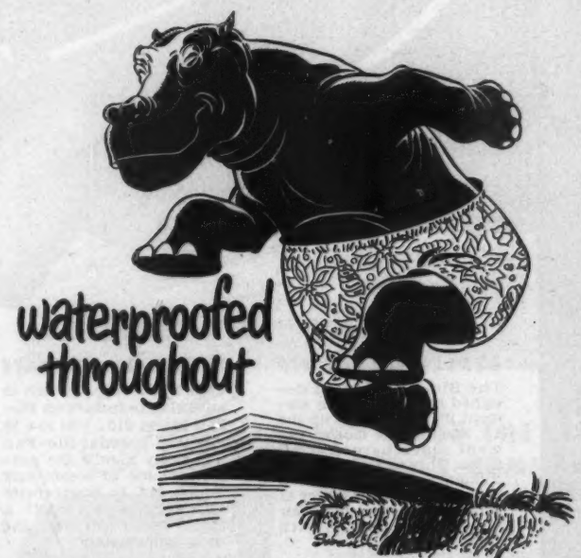


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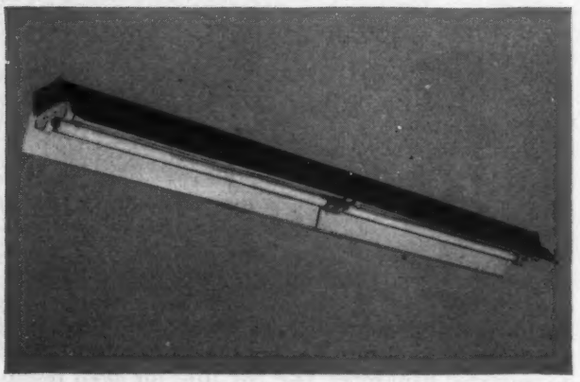
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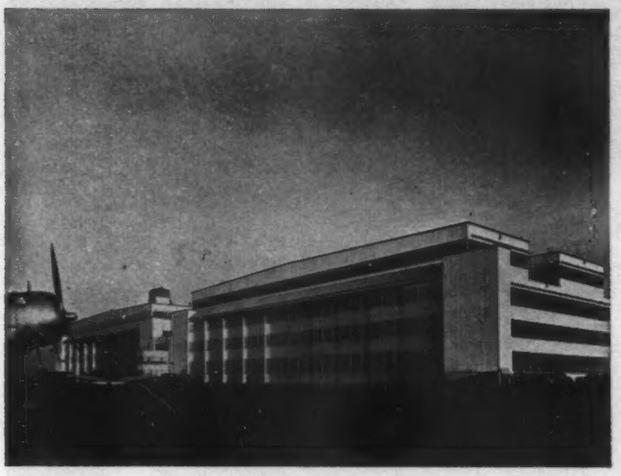
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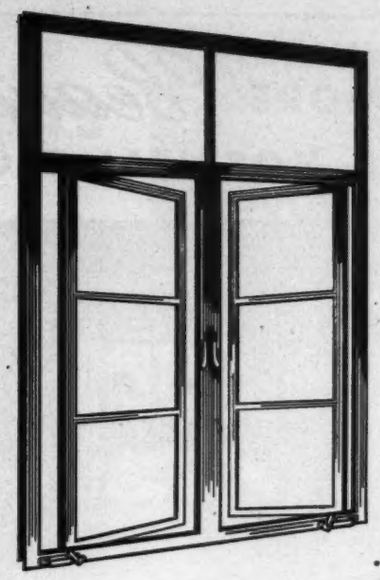


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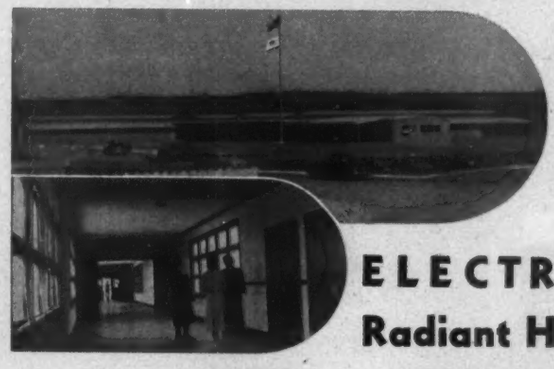
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- Klamath Elementary Klamath, Calif.

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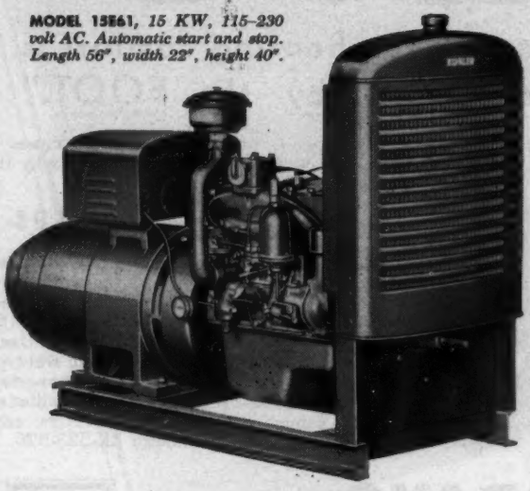
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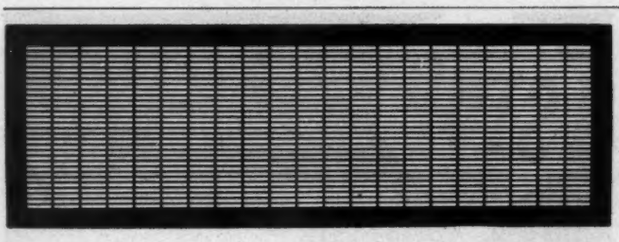
Hospitals need stand-by electricity for operating room and exit lights, X-rays, sterilizers, iron lungs, call bells. Schools, stores, theatres need it to prevent sudden darkness and confusion—homes, to maintain automatic heat, refrigeration. It prevents interruptions in processing plants, communication systems, hatcheries, greenhouses, hotels, airports, refineries, filling stations, sewage treatment plants. Civil defense programs specify stand-by power for shelter areas, first aid stations.

Kohler stand-by electric plants—750 watts to 15 KW—take over critical loads automatically when central station service is cut off. Write for folder 15-B.

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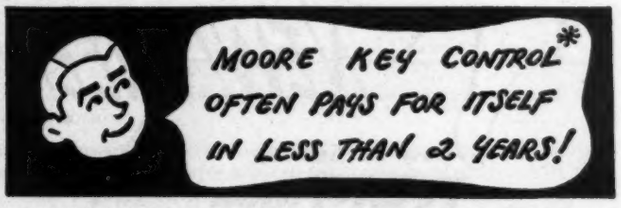
Hendrick makes perforated metal grilles in over a hundred other attractive designs. Write for detailed information.

1876 — Seventy-Fifth Anniversary — 1951

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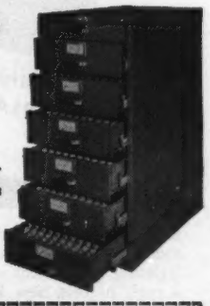
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Section of a typical control panel

Drawer file cabinets



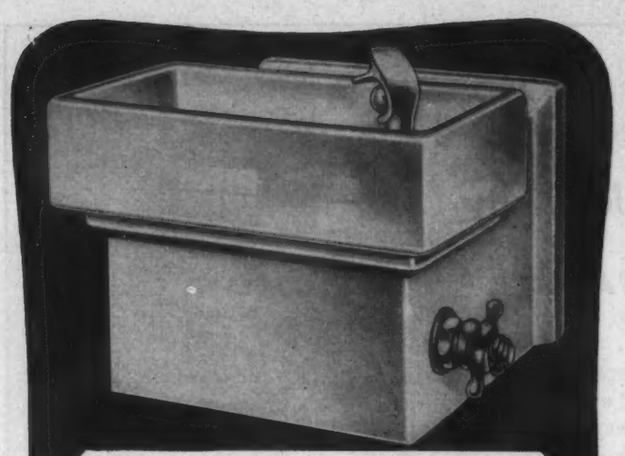
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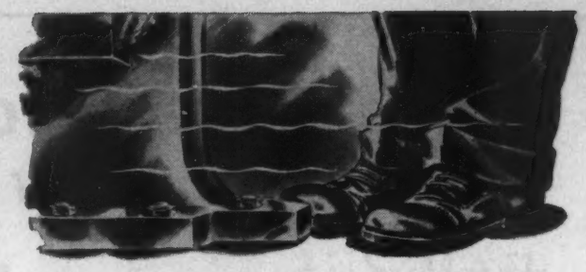
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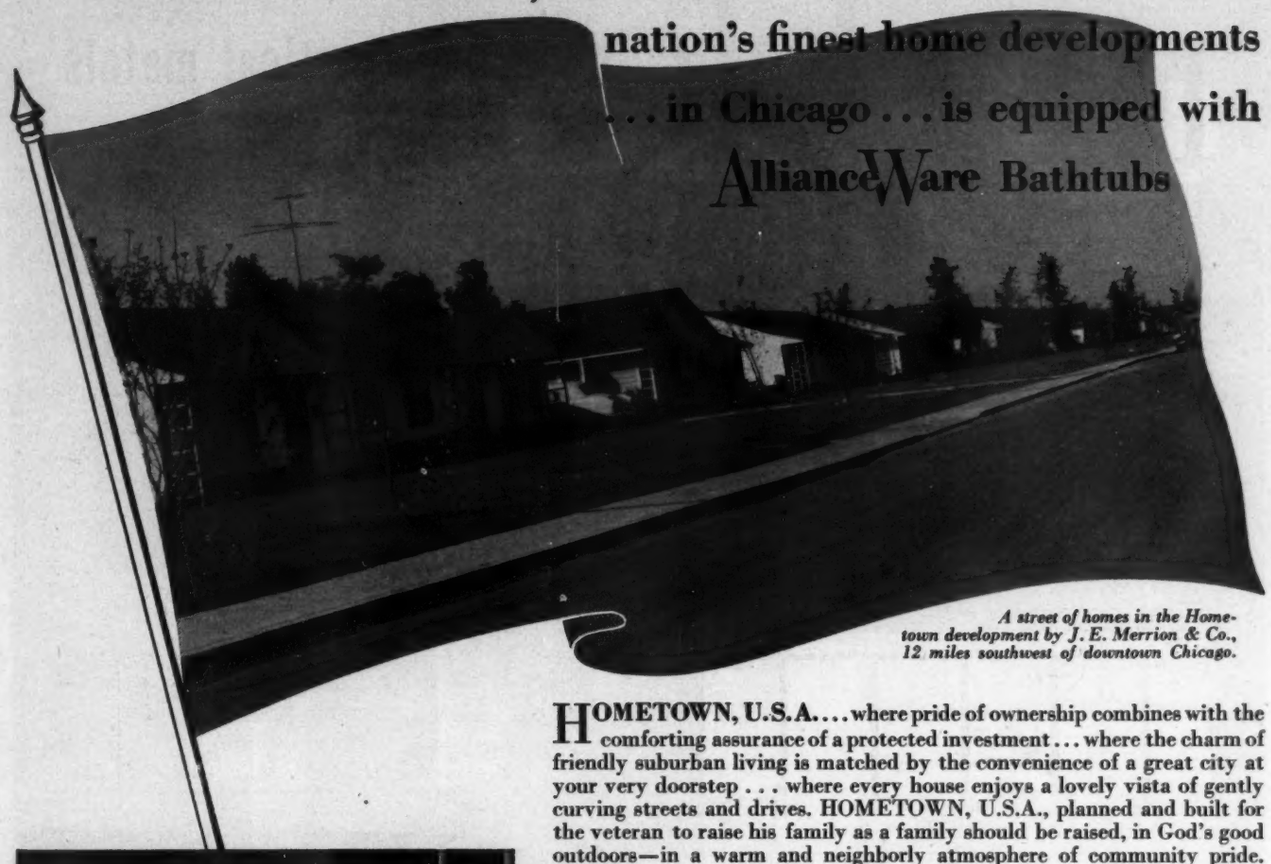
Send for test kit, technical data

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(The Index to Advertising is now on page 6.)

Hometown, U.S.A. Another of the nation's finest home developments . . . in Chicago . . . is equipped with AllianceWare Bathtubs



A street of homes in the Hometown development by J. E. Merrion & Co., 12 miles southwest of downtown Chicago.

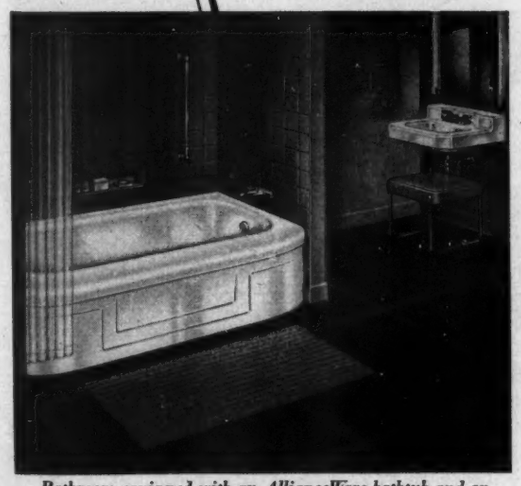
HOMETOWN, U.S.A. . . . where pride of ownership combines with the comforting assurance of a protected investment . . . where the charm of friendly suburban living is matched by the convenience of a great city at your very doorstep . . . where every house enjoys a lovely vista of gently curving streets and drives. HOMETOWN, U.S.A., planned and built for the veteran to raise his family as a family should be raised, in God's good outdoors—in a warm and neighborly atmosphere of community pride.

In Chicago's HOMETOWN in the vicinity of Crawford Avenue and West 90th Place, several hundred dwelling units of the planned 1600 units that are already occupied or nearing completion are equipped with AllianceWare bathtubs.

Most important among the essentials of modern living in the American way is modern home equipment—modern bathrooms and modern kitchens. There are sound reasons for the choice of AllianceWare porcelain-on-steel sanitary ware by leading builders. Modern styling, stainproof surface and choice of colors in AllianceWare enhance the beauty of bathrooms, large or small.

Practical details of AllianceWare construction, such as exact dimensions, wall guard flange that stops water leaks around the tub at the wall line, and anchor lugs which prevent shifting or settling of tub are added values for the builder.

Your plumbing contractor will be glad to give you full details of AllianceWare, or write us for catalog sheets describing the complete AllianceWare line.



Bathroom equipped with an AllianceWare bathtub and an AllianceWare lavatory

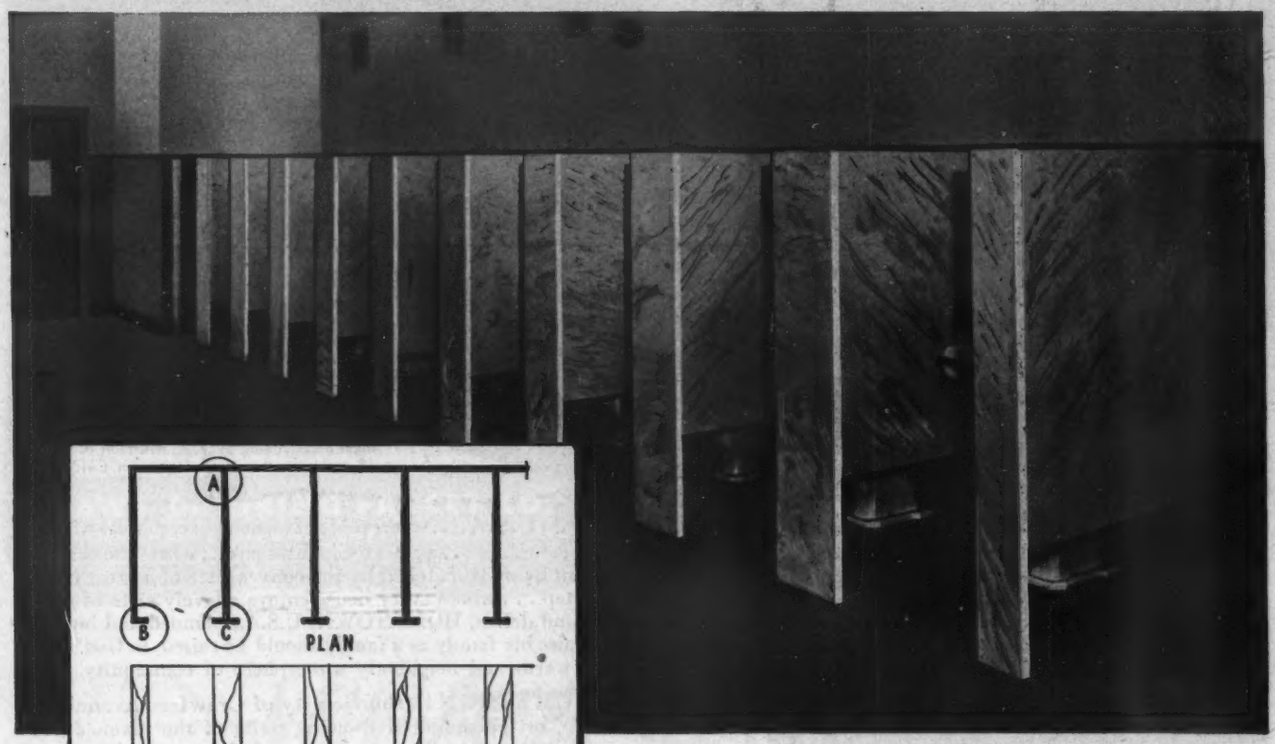
HOMETOWN is being erected by
J. E. Merrion & Company
Emil J. Minx, *Architect*

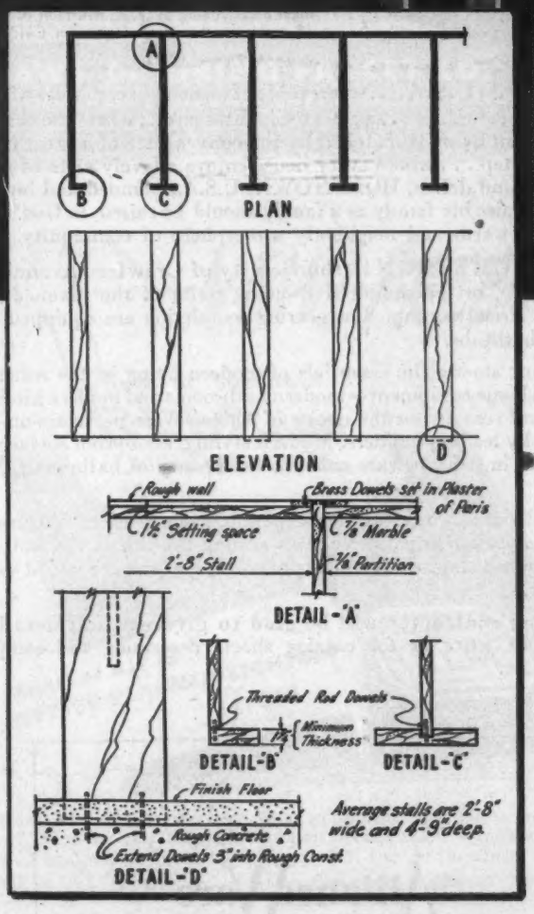
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